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MEDICAL JURISPRUDENCE.

PRACTICAL COMMENTARIES ON

DR. CHRISTISON'S PROCESSES FOR DETECTING POISONS.

COPPER.—ZINC.—BARYTA.—OPIUM.—NUX VOMICA.—PRUSSIC ACID.

The only processes described by our author, which remain to be noticed, are those recommended for the detection of copper, zinc, baryta, opium, strychnine, and hydrocyanic acid. On the first of these we shall not dwell long, as we this week publish, in another part of our Journal, an article which we have received on the same subject, the author of which (Dr. O'Shaughnessy) entirely follows Dr. Christison's method of examining suspected mixtures, with the exception of using nitric acid instead of the acetic, estimating the *quantity* of the sulphuret and reducing this to the metallic state, a consummation of the experiment on which Dr. Christison does not insist. The existence of copper in various organic substances is a curious phenomenon, and further researches on the subject seem extremely desirable, either to extend the list of substances in which it has already been found, or to point out those in which it is altogether deficient. We would recommend, to those who have leisure to prosecute the subject, the institution of experiments on various kinds of cheese. We have found copper in the Stilton and Parmesan, but as it remains doubtful whether in these instances the copper has not proceeded from the vessels used in the manufacture of the cheese, it would be well to examine specimens prepared in vessels ascertained to be free from cupreous ingredients.

Before proceeding further we may remark, that in the paper already alluded to, the estimation of the atomic equivalents of copper is not *fractionally* correct; for practical purposes, however, it is more useful than a precise calculation, inasmuch as the relative quantities are more easily understood, and, what is of almost equal importance, more readily explained.

Zinc.—The following description of the chemical relations of zinc is individually so complete, that we extract it without note or comment. We must remark, however, that to the influence of metallic emetics over medico-legal analysis, Dr. Christison does not pay the attention which the subject demands, although from the observation in the first sentence of the following extract, he shows himself fully aware of the important modifications emetics may render necessary in inquiries of these descriptions.

"*Of Poisoning with Zinc.*—The compounds of zinc, which have been long used in considerable doses in medicine, have sometimes caused serious and even fatal effects. Partly on this account, and partly because one of them, the sulphate of zinc, being the emetic most commonly used in the treatment of poisoning, is apt to complicate various medico-legal analyses, it will be proper to notice both its physiological properties and the mode of detecting it by chemical means. The only important compound of this metal is the sulphate of white vitriol. As usually sold in the shops, it forms small, prismatic crystals, transparent, colourless, of a very styptic metallic taste, and exceedingly soluble in water; that which is kept by the apothecary is generally pure, but the salt of commerce commonly contains an admixture of sulphate of iron, by the presence of which the natural action of the tests for zinc is materially modified. The solution of the pure salt is precipitated white by the caustic alkalies, an oxide being

thrown down, which is soluble in an excess of ammonia. The alkaline carbonates also precipitate it white, the carbonate of ammonia being the most delicate of these reagents; the precipitate is soluble in an excess of carbonate of ammonia, and is not thrown down again by boiling. The precipitate produced both by the alkalies and by their carbonates becomes yellow, when heated nearly to redness, and on cooling it becomes again white. This is a very characteristic property, by which the oxide of zinc may be known from every other white powder. The ferro-cyanate of potass also causes a white precipitate. A stream of sulphuretted hydrogen likewise causes a white precipitate, the sulphuret of zinc, the colour of which distinguishes the present genus of poisons from all those previously mentioned, as well as from the next genus, the poisons of lead; the precipitate is apt to be suspended till the excess of gas is expelled by ebullition. When the sulphate of zinc contains iron, the alkalies throw down a greenish-white precipitate, the alkaline carbonates a grayish or reddish white, the ferro-cyanate of potass a light blue, but sulphuretted hydrogen the usual white precipitate. 'Tincture of galls, which merely renders the pure salt hazy,' causes a deep violet coagulum, if there is any ferruginous impurity. The sulphate of zinc is acted on by albumen and milk, precisely in the same manner as the sulphate of copper; the salt is decomposed, and the metallic oxide forms an insoluble compound with the animal matter. When the sulphate of zinc has been mixed with vegetable and animal substances, the action of the tests mentioned above is modified. In such circumstances I have found the following process convenient:—The mixture being strained through gauze, is to be acidulated with acetic acid, and filtered through paper. The acetic acid dissolves any oxide of zinc that may have been thrown down in union with animal matter. The filtered fluid is then to be evaporated to a convenient extent, and treated when cool with sulphuretted-hydrogen gas, upon which a grayish or white milkiness, or precipitate, will be formed. The excess of gas must now be expelled by boiling, and the precipitate washed by the process of subsidence and effusion, and collected on a filter. It is then to be dried and heated to redness in a tube. When it has cooled it is to be acted on by strong nitric acid, which dissolves the zinc and leaves the sulphur. The nitrous solution should next be diluted, and neutralised with carbonate of ammonia; after which the liquid tests formerly mentioned will act characteristically. The effect of carbonate of ammonia, and that of heat, on the carbonate of zinc, which is thrown down, ought to be particularly relied on. I have tried this process with the matter vomited after the administration of sulphate of zinc, in a case of pretended poisoning, and found it to answer exceedingly well."

Baryta.—The following process, like the former, is, as far as it goes, entirely unexceptionable. There is one point, however, which the author has neglected to notice, and which we shall endeavour to remedy. Before it can be understood it is necessary to study the quotation itself.

"Three compounds of this substance may be mentioned, the pure earth or oxide, the muriate or hydrochlorate, and the carbonate. The pure earth, however, is so little seen, that it is unnecessary to describe its chemical or physiological properties.

"The *carbonate of baryta* is met with in two states. Sometimes it is native, and then commonly occurs in radiated crystalline masses, of different degrees of coarseness of fibre, nearly colourless, very heavy, and effervescing with diluted muriatic acid. It is also sold in the shops in the form of a fine powder of a white colour, prepared artificially by precipitating a soluble salt of baryta with an alkaline carbonate. It is best known by its colour, insolubility in water, solubility with effervescence in muriatic acid, and the properties of the resulting muriate of baryta.

"The *muriate*, or *hydrochlorate*, is the most common of the compounds of this earth, having been for some time used in medicine for scrofulous and other constitutional disorders. It is procured either by evaporating the solution of the carbonate in hydrochloric acid, or by decomposing a more common mineral the sulphate, by means of charcoal aided by heat, dissolving in boiling water the sulphuret so formed, and decomposing this sulphuret by hydrochloric acid. It is commonly met with in the shops irregularly crystallized in tables. It has an acrid, irritating taste, is permanent in the air, and dissolves in two parts and a half of temperate water. The solution is distinguished from other substances by the following chemical characters. From all other metallic poisons hitherto mentioned, it is easily distinguished by means of sulphuretted hydrogen, which does not cause any change in barytic solutions. From the alkaline and magnesian salts, it is distinguished by the effects of the alkaline sulphates, which do not act on the former, but cause in all solutions of baryta a heavy white precipitate, which is insoluble in nitric acid. From the hydrochlorates of lime and strontia, it is to be distinguished by evaporating the solution till it crystallizes. The crystals are known not to be hydrochlorate of lime, because they are not deli-

quescent. The hydrochlorate of strontia (which resembles that of baryta in many properties, but which must be carefully distinguished as it is not poisonous) differs in form of the crystals, which are delicate six-sided prisms, while those of the barytic salt are four-sided tables, often truncated on two opposite angles, sometimes on all four,—by its solubility in alcohol, which does not take up the hydrochlorate of baryta,—and by its effect on the flame of alcohol, which it colours rose-red, while the barytic salts colour it yellow. The hydrochlorate of baryta is known from the other soluble barytic salts, by the action of nitrate of silver, which throws down a white precipitate. Vegetable and animal fluids do not decompose the solution of the hydrochlorate of baryta, except by reason of the sulphates and carbonates, which most of them contain in small quantities. But the action of its tests may be disguised, although the salt has not undergone decomposition. In that case the most convenient method of analysis is to add a little nitric acid, which will dissolve any carbonate of baryta that may have been formed,—to filter and then throw down the whole baryta in the form of sulphate, by means of the sulphate of soda, and to collect the precipitate, and calcine it with charcoal for half an hour in a platinum spoon or earthen crucible, according to the quantity. A sulphuret of baryta will thus be procured, which is to be dissolved out by boiling water, and decomposed after filtration by muriatic acid. A pure solution is thus easily procured."

The omission we have alluded to consists in this, that Dr. Christison overlooks the effect of the antidote, viz., sulphate of soda or magnesia, which must be administered by the medical attendant, and which will convert all the soluble barytic salt into an insoluble sulphate. Dr. Christison's process, performed on vomited matter containing this compound, will not afford a trace of the poison. We would, therefore, propose to dry the suspected substance, and heat it to redness in a silver or platinum crucible for half an hour. In this way the carbon of the organic animal or vegetable matters reduces the sulphate to the state of sulphuret, a compound soluble in dilute muriatic acid, with disengagement of sulph. hydrogen gas. The filtered fluid may then be examined according to the properties of the earth described in the preceding extract.

The next poison we arrive at is

Opium, and its alkaloid principle, morphine.—In his description of the chemical properties of these substances, and of the mode in which they may be detected, the author is exceedingly successful. Notwithstanding the facility with which vegetable poisons are removed beyond the reach of analysis by digestion, and other causes, in many fatal cases opium may be detected by the subjoined experiments, and they are equally applicable to its recognition in porter or other fluids of this description.

It is necessary to premise that opium is a concrete vegetable exudation composed of various proximate principles; viz., morphia, meconic acid, narcotine, resin, caoutchou, lignin, &c. Of these the two first are alone important, as far as the process for the detection of opium is concerned. They coexist in opium in the state of the meconate of morphia, and from its watery infusion or alcoholic solution the first may be precipitated by ammonia, and the second by the subacetate of lead, the meconate of lead being thrown down, which, when decomposed by sulphuretted hydrogen, sets free the meconic acid:—

"*Of the Tests for Meconic Acid.*—Meconic acid, as procured by evaporation, is in little scales of a pale-brown or yellowish tint, being rendered so by adhering resin or extractive matter, from which it has hitherto been found impossible to free it altogether. 1. When heated in a tube, it is partly decomposed and partly sublimed, and the sublimate condenses in filamentous radiated crystals. 2. When dissolved even in a very large quantity of water, the solution acquires an intense cherry-red colour, with the permuriate of iron; the sublimed crystals have the same property: only one other acid is so affected, namely, the sulpho-cyanic, a very rare substance. 3. Its solution gives a pale-green precipitate with the sulphate of copper, and, if the precipitate is not too abundant, it is dissolved by boiling, but reappears on cooling.

"*Of the Tests for Morphia.*—Morphia, when pure, is in small, beautiful, white crystals. Various forms have been ascribed to them; but in the numerous crystallizations I have made, it has always assumed the form of a flattened hexangular prism. It has a bitter taste, but no smell. A gentle heat melts it, and if the fluid mass is then allowed to cool, a crystalline radiated substance is formed. A stronger heat reddens and then chars the fused mass, white fumes of a peculiar odour are disengaged, and at last the mass kindles and burns brightly. Morphia is very little soluble in water. It is more soluble in ether. But its proper

solvents are alcohol, or the diluted acids, mineral as well as vegetable. Its alcoholic solution is intensely bitter, and has an alkaline reaction. From its solutions in the acids, crystallizable salts may be procured, and morphia may be separated by the superior affinity of any of the inorganic alkalies, more particularly by ammonia. Morphia becomes instantly orange-red when treated with nitric acid. When suspended in water, and then treated with a drop or two of the permuriate of iron, it is dissolved, and forms a dirty indigo-blue solution. A concentrated solution in acetic acid is similarly acted on. - - - - -

"*Of the Process for detecting Opium in mixed fluids and colours.*—Having stated these particulars of the chemical history of opium and its chief component ingredients, I shall now describe what has appeared to me the most delicate and satisfactory method of detecting it in a mixed state. 1. If there is any solid matter it is to be cut into small fragments, water is to be added if necessary, then a little acetic acid sufficient to render the mixture acidulous, and when the whole mass has been well stirred and has stood a few minutes, it is to be filtered and evaporated at a temperature somewhat below ebullition to the consistence of a moderately thick syrup. To this extract strong alcohol is to be gradually added, care being taken to break down any coagulum which may be formed; and after ebullition and cooling, the alcoholic solution is to be filtered. The solution must then be evaporated to the consistence of a thin syrup, and the residue dissolved in distilled water and filtered anew. 2. Add now the solution of subacetate of lead as long as it causes precipitation, filter and wash. The filtered fluid contains the morphia, and the precipitate on the filter contains meconic acid united with the oxide of lead. 3. The fluid part is to be treated with sulphuretted hydrogen to throw down any lead which may remain in solution. It is then to be filtered while *cold*, and evaporated sufficiently in a vapour-bath. If, notwithstanding the action of the salt of lead and that of the sulphuretted-hydrogen, the liquid is considerably coloured, the colour must be destroyed by filtering it through animal charcoal. The solution thus eventually procured is to be subjected to the tests for morphia formerly mentioned; and when the quantity is very small, the tests which ought to be chosen are—the taste, the action of perchloride of iron on the fluid, and the action of nitric acid on the residue of its evaporation. 4. It is useful, however, to separate the meconic acid also; because, as its properties are more delicate, I have repeatedly been able to detect it satisfactorily, when I did not feel satisfied with the result of the search for morphia. Dr. Ure made the same remark in his evidence on the trial of Stewart and his wife. He detected the meconic acid, but could not separate the morphia. Suspend, therefore, in a little water the precipitate caused by the subacetate of lead; transmit sulphuretted hydrogen till the whole precipitate is blackened; filter immediately without boiling; then boil, and if necessary filter a second time. A great deal of the impurities thrown down by the subacetate of lead will be separated with the sulphuret of lead, and the meconic acid is dissolved. But it requires in general farther purification, which is best attained by again throwing it down with subacetate of lead, and repeating the steps of the present paragraph. The fluid is now to be concentrated by evaporation, and subjected to the tests for meconic acid, more particularly to the action of perchloride of iron, when the quantity is small. If there is evidently a considerable quantity of acid, a portion should be evaporated till it yields crystalline scales, which have always a yellowish tint; and these are to be heated in a tube to procure the arborescent crystalline sublimate formerly described. About a sixth of a grain of meconic acid, however, is required to try the latter test conveniently."

Before we leave opium we may remark that in Dr. A. T. Thomson's Conspectus of the Pharmacopœiæ, appendix on poisons, we find its chemical properties noticed thus,—"*Opium.*—Test, none, if we except the peculiar and familiar odour of the drug."—We need offer no remarks on this strange assertion.

Closely allied to the foregoing in chemical properties is the

NUX-VOMICA, and its alkaloid strychnine, for the detection of which we find the following process recommended:—

"*Tests of Nux-Vomica.*—Nux-vomica, the most common of the species, is a flat, roundish kernel, hardly an inch in diameter, of a yellowish or greenish-brown colour, and covered with short silky hairs. In powder it has a dirty greenish-gray colour, an intensely bitter taste, and an odour like powder of liquorice. It inflames on burning charcoal, and when treated with nitric acid acquires an orange-red colour, which is destroyed by the addition of protochloride of tin. Its infusion also is turned orange-red by nitric acid, and precipitates grayish-white with tincture of galls. *Orfila* and *Barruel* have made some experiments on the mode of detecting it in the stomach, and the following is the plan recommended by them:—The contents of the stomach, or the powder, if it can be separated, must be

boiled in water acidulated with sulphuric acid. The liquid after filtration is neutralized with carbonate of lime, and then evaporated to dryness. The dry mass is then acted on with successive portions of alcohol, and evaporated to the consistence of a thin syrup. The product has an intensely bitter taste, precipitates with ammonia, becomes deep orange-red with nitric acid, and will sometimes deposit crystals of strychnia on standing two or three days. These experiments it is important to remember, because, contrary to what takes place in regard to the vegetable poisons generally, nux-vomica is very often found in the stomachs of those poisoned with it."

We have now arrived at the last of Dr. Christison's processes, namely that for the detection of

HYDROCYANIC ACID.—The author's description here is exceedingly good, and admits of no condensation:—

"The tests for the hydrocyanic acid have been lately examined by M. Lassaigne of Paris, by Dr. Turner of London, and by Professor Orfila. They are, its odour, the salts of copper, the salts of the protoxide of iron, and nitrate of silver. The *peculiar odour* of the acid is a very characteristic and delicate test of its presence. According to Orfila, the smell is perceptible when no chemical reagent is delicate enough to detect it. But I must observe, that I have known some persons who were nearly insensible of any smell, even in a specimen which was tolerably strong. Hence when the odour is resorted to as a test, it ought to be tried by several persons. The *sulphate of copper* forms with hydrocyanic acid, when rendered alkaline with a little potass, a greenish precipitate, which becomes nearly white, on the addition of a little hydrochloric acid. The purpose of the hydrochloric acid is to redissolve some oxide of copper thrown down by the potass. The precipitate is then the cyanide of copper. This test, according to Lassaigne, will act on the poison when dissolved in 20,000 parts of water. But as the precipitate is not coloured, the test is an insignificant one compared with the next. If the acid is rendered alkaline by potass, the *salts of the protoxide of iron* produce a grayish-green precipitate, which, on the addition of a little sulphuric acid, becomes of a deep Prussian-blue colour. The common green vitriol answers very well for this purpose. The salts of the peroxide of iron will also often answer, because, unless carefully prepared, they are never altogether free of protoxide. But, contrary to what is stated by Lassaigne,—by MM. Thenard, Vauquelin, and Magendie, the reporters of the Academy on his paper, and still more recently by Orfila, the salts of the pure peroxide of iron have no such effect. They cause with the potass a brownish precipitate, which is redissolved on the addition of sulphuric acid, leaving the solution limpid. These errors have been rectified by Dr. Turner, who also shows, contrary to the statements of Lassaigne, that the protosulphate of iron is a more delicate test than the sulphate of copper. This I have also had occasion to remark.

"The *nitrate of silver* is considered by Professor Orfila a very delicate and characteristic reagent for hydrocyanic acid. A white precipitate is produced in a very diluted solution; and this precipitate is distinguished from the other white salts of silver, by being insoluble in nitric acid at ordinary temperatures, but easily soluble in that acid at its boiling temperature. A more characteristic property is, that the precipitate when dried and heated emits cyanogen gas, which is easily known by the beautiful rose-red colour of its flame. Sometimes it is necessary to determine the strength of diluted hydrocyanic acid, because, on account of its tendency to decomposition, doubts may be entertained whether a mixture which contains it is strong enough to be dangerously poisonous. According to Orfila, the best method of ascertaining the strength either of a pure solution or of a mixture in syrup, is to throw down the acid with the nitrate of silver and dry the precipitate; a hundred parts of which correspond to 20.33 of pure hydrocyanic acid.

"*Process for mixed fluids.*—Some important observations have been lately made by MM. Leuret and Lassaigne on the effect of mixing animal matters with hydrocyanic acid. The most material of their results are, that if the body of an animal poisoned with the acid is left unburied for three days, the poison can no longer be detected; and that if it is buried within twenty-four hours, the poison may be found after a longer interval, but never after eight days. The reason is, either that the acid is volatilized, or that it is decomposed. For detecting the poison in mixed fluids, Orfila has lately advised the following process. The fluid may be treated with animal charcoal without heat. The colour being thus generally destroyed, the tests will sometimes act as usual. Or, without this preparation, a slip of bibulous paper moistened with pure potass, may be immersed in the suspected fluid for a few minutes, and then touched with a solution of sulphate of iron; upon which the usual blue colour will be produced on the paper. If neither of these methods should answer, the fluid is to be distilled. Distillation of the fluid is, on the whole, the best mode of procedure. It was proposed some time before

by Lassaigne and Leuret for detecting the poison in the stomach after death. The steps of their process, which appears to me the best yet proposed, are as follows:—The contents after filtration are to be neutralized with sulphuric acid if they are alkaline, in order to fix the ammonia which may have been disengaged by putrefaction; the product is then to be distilled from a vapour-bath, till an eighth part has passed over into the receiver; and the distilled fluid is to be tested with the proto-sulphate of iron in the usual way. By this process Lassaigne could detect the poison in a cat or dog killed by twelve drops, and examined twenty-four or forty-eight hours after death. But Dr. Schubarth has objected to it,—and the same objection will apply to every process in which heat is used,—that hydrocyanic acid may be formed during the distillation by the decomposition of animal matter. His objection, however, appears only to rest on conjecture, or presumption at farthest; and I doubt whether, supposing the distillation to go on slowly in the vapour-bath, the heat is sufficient to bring about the requisite decomposition. The force of the objection must be decided by future researches."

The process recommended above by Orfila deserves attention, on account of the serious fallacies to which it exposes the inexperienced analyst. Paper moistened with potash produces by itself, with the solution of sulphate of iron, a bluish-green stain, so like that caused by prussic acid, that it will certainly deceive any inexperienced examiner. This stain is the hydrated protoxide of iron, and may be distinguished from the hydrocyanate by exposure to the air for a few minutes, when, if the first, it continues blue, or even deepens in that colour; if the second, it attracts oxygen rapidly from the air, and changes into the red peroxide or *iron mould*, as it is popularly termed.

Another point well deserving of examination, is the question of the spontaneous generation of prussic acid during the heating of animal matters. We have some grounds for supposing that Schubarth's speculations are well founded, and for believing that the acid may even be formed as a product of putrefaction at ordinary temperatures.

In our next Number we shall, as an addition to this series of processes, describe an improved method by which iron may be recognised, and its quantity estimated in malt liquors. We shall also state the method of detecting bismuth, a poison which has recently occasioned some fatal accidents, and for which we find no process recommended by our author; and, lastly, we shall take into consideration the several antidotes which produce a cure by the influence of chemical decompositions.

ON THE RECENT DISCOVERY OF

COPPER IN ORGANIC MATTERS,

CONSIDERED WITH RESPECT TO CASES OF POISONING, OR THE ADULTERATIONS OF FOOD.

(Read before the Westminster Medical Society, Saturday, March 5.)

By W. B. O'Shaughnessy, *M.D.*

The manifest importance of the subject to which I have taken the liberty of requesting the attention of this Society, will I trust relieve me from the imputation of consuming their valuable time in idle and profitless speculations. An inquiry into the medico-legal value of chemical evidence in deciding on the presence of any deleterious substance in a suspected compound, no matter what the poison may be, must, if properly conducted, be attended with a certain degree of advantage to the public remotely, and more immediately to the medical profession. The interest of the inquiry is of course proportionate to the virulence of the destructive agent, and in this respect the preparations of copper undoubtedly occupy a very prominent place.

In the brief remarks which I proceed to offer, I mean entirely to restrict myself to the value of *chemical* evidence in deciding on cupreous poisoning or adulteration. With the semeiology or pathology of these cases, I shall not interfere, partly because these subjects have already been investigated with an ability and precision which scarcely admit of any improvement, but principally that I should not distract attention from a point in itself of sufficient importance. Moreover, for many reasons, chemical evidence of poisoning constitutes a distinct and insulated subject; for example, it not unfrequently happens, that from the unfortunate lack of analytic habits in the general body of practitioners, a suspected substance is sent from a distance for analysis, in which case the examiner is usually unaided by the history of the case in arriving at his conclusions. Again, in cases which do not prove fatal, as in feigned or imputed poisoning, or in accidents from spoiled food, or in casual concurrent vomitings or sporadic cholera in individuals, the chemical analysis is almost of exclusive importance. Lastly,

in adulterations of food we have scarcely any other guide to conduct us to a correct decision, inasmuch as it but rarely happens that adulterators are so incautious or unskilful as to add such quantities of any pernicious ingredient, as might indicate the fraud by its speedy physiological effects.

Having premised these general remarks, I proceed to state that the object of the succeeding observations, is, to prove that from the natural existence of the oxide of copper in various organic substances, first, that the detection of minute quantities of that metal in suspected cases affords, *per se*, no grounds of imputation; secondly, that in all cases of analysis it is absolutely necessary that the quantity of the copper detected should be accurately estimated. As far as my limited information extends, no attention has yet been paid to these circumstances by medico-legal authorities. At least, the latest and best work of this description is totally silent on the subject.

The existence of the oxide of copper in organic matters was first noticed and demonstrated by the celebrated Assessor Gahn, of Fahlun, who was accustomed to exhibit the production of distinct particles of metallic copper reduced by him with the mouth-blowpipe from a quarter of a sheet of burnt paper. Singular as was this fact, it seems to have for some time attracted but little attention. The next experiment worthy of record on the subject, is stated by *Bucholz*, who detected copper in the ashes of the *amomum zedoaria*, in the galanga root, in others of the same family, and in various other vegetables of distinct kinds. These researches were pursued by *Meisner* with further success; and, lastly, *M. Sarzeau* has shown in the *Annales de Chimie* for July, 1830, that not only does copper exist in the plants enumerated by Meisner, but in various products of the animal department of organization. I should also say that in the admirable and highly-useful translation of Rose's Manual of Analysis, just published in this country, it is stated, that copper may be detected in solutions of sugar by a reagent to which I shall presently have occasion to revert.

Of these experiments, those of M. Sarzeau are, in a medico-legal point of view, by far the most important. He enumerates cinchona bark, two kinds of coffee, cheese, and blood, as substances in which he has detected minute quantities of the metal; and in coffee, he states it to exist to the extent of a grain in the pound. The process by which M. Sarzeau proceeded, was by drying and incinerating the substances for examination, treating the ashes with dilute nitric acid, saturating the solution with ammonia, which throws down several foreign matters, still retaining the copper in solution. The mixture is then slightly acidulated with acetic acid, and the few drops of ferrocyanate of potash added. The first effect occasioned is the production of a brownish tinge, which deepens in some hours, and in the course of twenty-four hours (in some cases longer), a brown flocculent precipitate is deposited, the ferrocyanate of the oxide of copper.

To obtain the metal from this precipitate is exceedingly easy. It consists in heating the precipitate to redness on a porcelain capsule, by which the hydrocyanic acid is partly expelled, and partly retained in combination with the oxide of iron, leaving on the capsule a mixture of the peroxide of copper, and the blue hydrocyanate of iron; on this you act with a little dilute sulphuric acid, which dissolves both metals, and by the addition of ammonia the iron is precipitated, and the copper retained in solution as before. You have now but to filter, acidulate with a little sulphuric acid, and introduce a bit of pure iron wire, which shortly becomes coated with metallic copper.

Since the publication of M. Sarzeau's paper, I have repeated the process with every precaution against fallacy I could devise, being impressed with the idea, that if I obtained similar results, they should induce medical jurists in this country to be cautious in deciding on poisoning or adulteration by copper on chemical evidence.

I first procured a sufficient quantity of nitric acid and ammonia to serve for all my experiments, and lest the copper might be contained in either of these fluids, I neutralized a portion of one with the other, dropped in the solution of ferrocyanate of potash, and patiently allowed them to stand for ten days, and not the slightest effect was produced; no fallacy was therefore to be apprehended from the materials employed, and this, I may remark, is by no means an unnecessary precaution, for I have more than once known a reagent to test itself, if I may be allowed to use the expression.

1st. The first experiment was with 10 ℥ of unroasted Berbice coffee; in 24 hours a dense precipitate occurred, which, by the necessary manipulations, coated two inches of harpsichord wire with metallic copper.

2nd. Fourteen ounces of white bread were similarly treated; a cupreous precipitate showed itself in minute traces in 24 hours, and in three days was sufficiently considerable to admit of decantation, incineration, and reduction by the immersion of the iron wire.

3rd. Eight ounces of black mustard-seed gave a similar result.

4th. One pound of beef afforded a faint metallic crust.

5th. From 16 ℥ of human blood, distinct

traces of copper were obtained at the end of six days.

6th. Three pounds of potatoes gave no cupreous marks; 1 lb. of pine charcoal seemed equally devoid of metallic impregnation.

7th. The last experiment I instituted, was one to which I would especially request the attention of the Society. I prepared an alimentary mass, such as I conceived might exemplify the rejected matters after a meal, perhaps, attended with suspicious circumstances. The mass consisted of two eggs, three cups of strong coffee, and eight ounces of bread and butter. On drying and incinerating this mass, and subjecting it to the other steps of the process, metallic copper was distinctly obtained.

Concerning the source of the copper thus detected, I shall not at present enter into any speculations, further than to remark, that with respect to bread, some difference of opinion may arise whether the copper actually exists in the corn, or is accidentally or designedly introduced during the subsequent steps of the preparation of bread. In support of the natural existence of the copper in corn, we have, first, the analogy of its undeniable existence in other vegetables; secondly, the evidence of M. Lefebure, a Dutch chemist of high reputation, who declares that he has found it in corn; and, thirdly, I may add my own experiments on bread, in which no adulteration of this kind has, in this country, been suspected. In opposition to these opinions, and in support of the designed adulteration, I may adduce the recent conviction and confessions of several bakers in Belgium, for practising this adulteration; secondly, in my own experiments, I have never succeeded in tracing copper in corn itself, although I have operated on a specimen growing over an extensive stratum of copper ore. That the copper may occur in bread accidentally, I conceive may arise from the *detritus* of mill-stones, which, in some districts, are, I am told, incorporated with malachite or the carbonate of copper; and, lastly, from the evidence of *M. Lodibert*, who, in a debate on this subject at the *Académie Royale de Médecine, séance de Janvier*, 1850, stated that the sulphate of copper was used for the prevention of the malting of grain. My own impressions on the subject are, that copper usually finds its way into bread by accident. The Belgic bakers used it by mistake for blue alumn. However, my experiments as yet have been too limited to enable me to pronounce a positive opinion on the subject.

However this question be decided, it is manifest that the natural existence of copper in the other substances I have described, must exercise an important influence over medico-legal analysis. One illustration I will advance on this subject. The Society, perhaps, are aware that a work under the odd appellation of "Disease and Death in the Pot and the Bottle" was published in London last year. Amidst other adulterations, it announced that the greening of Stilton cheese was sometimes effected by the use of verdegris; I accordingly procured a quantity of the green cheese, instituted on it nearly the same experiments recommended by M. Sarzean, and detected metallic copper. I can only say, that the appearance of M. Sarzean's paper prevented my denouncing the supposed adulteration to the local authorities, and on repeating the process with cheese not greened at all, an equal quantity of copper was obtained.

I have now, I trust, advanced enough to bear me out in my assertions; 1st, that on chemical grounds alone the detection of minute quantities of copper affords no grounds of imputation; and, 2nd, "that in all cases of analysis it is absolutely necessary that the quantity of the detected copper should be accurately estimated." I proceed, in conclusion, to detail a process by which the last object may be accomplished.

The points to be attended to in the quantitative detection of copper are fourfold. 1st. To bring all the copper in the suspected mixture into a state of solution. 2ndly. To free that solution from organic matter as much as possible. 3dly. To throw down from the solution an insoluble compound of copper, the combining proportions of which are well known; and *lastly*, to reduce that insoluble compound to the metallic state.

The *first* of these objects, namely, the dissolving of the copper, is readily and certainly effected by boiling the suspected material in dilute nitric acid for an hour in a porcelain vessel glazed with porcelain. The best vessels of this description, I may remark, are imported from Hamburgh, and no others should be used when these can be obtained.

The *second* point, viz., the freeing the solution from organic matter, is best obtained after the necessary mechanical filtration by the addition of caustic ammonia, which throws down caseum, albumen, the oxide of iron (which is often present), and various earthy matters, such as the phosphate of lime, while it retains the oxide of copper in solution.

The *third* step consists in the transmission of sulphuretted hydrogen through the mixture previously acidulated with acetic acid. An insoluble *sulphuret of copper* is formed, which readily subsides after boiling, and may be collected on a small filter. However, as the sulphuret of copper thus

obtained is always associated with organic matters, it should be incinerated on a little porcelain capsule over the spirit-lamp flame, and the residue redissolved in dilute sulphuric acid. This fluid is again to be neutralised with ammonia, a little acetic acid added, and sulphuretted hydrogen again transmitted. The sulphuret is now quite pure. It should then be washed, removed, dried in a water-bath, and carefully weighed. Of this black sulphuret—

100 Parts correspond to	Grs.	64 metal 80 peroxide
1 Grain....	2	anhyd. sulph. of copper
.....	3½	crystallised ditto
.....	1⅗	neut. anhyd. per acet.
.....	2½	crystallized ditto
.....	1¼	anhyd. carbon. copper
.....	1¼	crystallized.

Lastly, this sulphuret should be reduced to the metallic state by boiling it with a little dilute nitric acid in a test tube, neutralising with ammonia, which strikes a beautiful blue colour, reacidulating with sulphuric acid, and introducing pure iron wire.

The reasons why I prefer this process to that of incineration and precipitation by the ferrocyanate of potash, are briefly, because the sulphuretted hydrogen does not indicate copper in the substances in which that metal naturally exist; and secondly, because the combining proportions of the ferrocyanate of potash have not yet been ascertained with sufficient precision.

Before I conclude, there is one point which I would remind the Society is of vital importance to be attended to in our inquiries on any fatal case of poisoning by this metal; it is, whether a cupreous emetic has not been administered before death, and if it has been, what was the precise quantity of the dose? It is obvious, that a professional poisoner might endeavour to protect himself from suspicion and conviction by the open administration of a copper emetic, under the pretence of ridding the stomach of any deleterious and unknown substance. In such a case it is evident, that if to our question as to the quantity of copper contained in the emetic, he replies, five grains, and that on analysis we find sulphuret of copper equivalent to twelve grains, that the chemical evidence is as conclusive as if seven grains had been detected where no emetic had been given.

London, 5th March, 1831.

ST. THOMAS'S HOSPITAL.

CLINICAL LECTURE

DELIVERED BY

DR. ELLIOTSON,

Feb. 21, 1831.

DISEASE OF THE HEART, LUNGS, AND LIVER.

SINCE my last lecture, Gentlemen, one patient has died of chronic bronchitis and disease of the heart. The case was that of A. B., aged 40, who said he had been ill a year. Most of the cases which now terminate fatally among us, I am happy to say, are cases of long-continued organic disease.

His symptoms were, difficulty of breathing, cough, and mucous expectoration. The expectoration was frothy, and sometimes, he said, dark. There is a great variety in the character of the expectoration in chronic bronchitis. Sometimes it is clear, sometimes opaque, sometimes frothy, sometimes blackish, grey, or bluish, sometimes yellow. I have seen it of a bile yellow. Sometimes glary, sometimes nearly solid. Indeed there is in different cases, and in the same case at different times, no end to its varieties. There was likewise œdema of the legs. On listening over the chest, there was sonorous and sibilous rattle in various parts. The man clearly laboured under bronchitis. Sonorous rattle there was in almost every part of the chest. The chronic bronchitis was inferred from this rattle, in combination with the other symptoms, and it was quite sufficient to give rise to the difficulty of breathing, to the expectoration, and to the œdema of the legs.

Notwithstanding, however, the chronic bronchitis was sufficient to explain all these symptoms, I, of course, examined his abdomen, and I found there was more or less fluctuation in it, and the liver was decidedly enlarged and hardened. He therefore had, besides chronic bronchitis, ascites and disease of the liver.

On listening to the heart I found that it beat too strongly, and that *at the moment of the pulse* a bellows-sound was heard, loudest in the situation of the *left ventricle*; that is to say, to the left of the sternum. This bellows sound occurred at the moment of the pulse, and immediately afterwards there was a short clear strong sound, such as is ascribed by Laennec to the auricles, but much louder and clearer than the sound which is perceived in health. It was not loudest at the part where the bellows-sound was heard, but higher up. The auricles are situated above the ventricles, and this sound

was in the region of the auricles. I concluded, therefore, that there was an impediment to the passage of the blood from the left ventricle into the aorta, and that an auricle, or the auricles, were dilated, if Laennec was right in ascribing the second sound to the auricles.

The state of the pulse justified me in taking away a moderate quantity of blood. I bled him to twelve ounces, put him upon slops, and on account of the great difficulty of breathing he experienced, and the degree of sonorous rattle, I carried the antiphlogistic plan still further, and gave him two grains of calomel three times a day, with a scruple of tincture of digitalis. On the 23d I bled him again, but only to twelve ounces, as the disease was chronic. He seemed to have suffered an aggravation of the complaint from a fresh cold he caught, and was labouring under an acute attack, but as this acute attack was superadded to a chronic disease, I considered it dangerous to have recourse to active depletion. His diet was a little increased; that is to say, he was allowed a portion of milk. Still the symptoms continued, and the pulse did not decline at the end of a month (the 21st of December), and a fresh attack then appearing to come on, his breathing being more difficult, and the sonorous rattle increasing, I bled him again to twelve ounces. His pulse bore this so well, that, his symptoms still continuing, I bled him again to about a pint, and in about a week more I cupped him on the chest, and then he went on well till it was found necessary to have recourse again, from the state of the pulse, to bleeding, and on the 12th of January I bled him again to ten ounces. His mouth, which was formerly sore, being now well, and another fresh attack coming on, I gave him the calomel a second time, in doses of three grains twice a day. It was necessary, however, still to go on with small bleedings, which *always afforded him very great relief*, and the blood was always *much cupped and buffed*. He was bled on the 21st of January to eight ounces, on the 27th of January to twelve ounces, and on the 3d of this month (Feb.) another acute attack took place, making it necessary to cup him on the chest to ten ounces; the windows of the ward I found had been set open to let out the smoke, and he had in consequence another severe attack of acute bronchitis. However, the disease having lasted so long, I could not bleed him more than once, and this afforded him as usual great relief. He was obliged to sit up in bed; and he sank in the most gradual manner, and died on the 14th of this month. He was not inspected in the hospital, but some gentlemen were so kind as to go to his residence, and make the examination there.

I understand that the lungs showed chronic bronchitis in every part; that the bronchial tubes throughout the organ were very much thickened, showing the nature of the disease; that the lungs, too, were very heavy, and filled with frothy fluid, so that on lifting up a section of them, a serous fluid poured forth, as it would from a sponge. The lungs were pervious in every part, as they generally are in bronchitis; but there was a large collection of fluid in the tubes and air-cells, and perhaps in the cellular membrane, too, of the lungs; and consequently, on squeezing them, the fluid not only ran out, but ran out frothy. There was no effusion into the cavity of the chest on either side; that of course could not be, because respiration was heard distinctly on each side, even to the lowest part. But in examining the heart, the evidence of disease was very strong. There was more or less hypertrophy of the left ventricle; it was also dilated, and very considerable valvular disease existed, as you will see. The left ventricle is in a state of hypertrophy and dilatation; the substance is not thickened, but the cavity is larger than it should be, and yet the thickness of the parietes is not diminished, consequently there must have been more or less additional substance to maintain the natural thickness; and this accounts for the original violence of the pulse, and the strength of the heart's action.

The pericardium was found coherent throughout. I wish particularly to direct your attention to this, because some have an idea that adhesion or cohesion of the pericardium is very dangerous; and some have the very same idea of cohesions of the costal and pulmonary pleuræ. Now I do not believe that any harm in general arises from those adhesions. Some people think, if they have a pain in the side, they have adhesion of the pleura, and make themselves very miserable. If they have, I do not think any harm usually results from it; and I believe that most of us, if we were examined now, would be found to have some adhesions, though we are in good health; and so it is with the pericardium. For my own part, I have never seen the least symptoms from even complete cohesion of the pericardium. I know very strong adhesion *at a single spot* will keep the heart there so close to the parietal pericardium, that when a person lies in a direction to draw the heart from that situation, it will be put upon the stretch, and give rise to a smarting pain. This man had no symptom about the heart, but what was all referable to the hypertrophy and valvular disease.

A patient of one of my colleagues was examined last week, who died of chronic pleuritis, with *empyema*, and in him the pericardium was quite coherent in every point,

and yet he had experienced no sign of cardiac disease. My colleague had carefully examined him, and no symptom of cardiac disease had been detected, nor had the man made the slightest complaint that could be referred to the heart, and yet the cohesion must have been of long standing. However, the cohesion of the pericardium in this particular case, illustrates another fact, that where there is organic cardiac disease, as the result of inflammation; where the internal membrane, for instance, is diseased from previous inflammation, the pericardium is generally affected also. Here there is considerable valvular disease, as I will show you, of the membrane within, and the cohesion of the pericardium without. I presume that pericarditis existed at one time, and had glued the two portions of the pericardium together.

I have mentioned over and over again, that I believe the greater number of diseases which occur in the hearts of young persons, that is, in persons not past the prime of life, begin as inflammations, and inflammations, too, of the pericardium. That appears to have been the case here. There was no pericardial cavity externally to the heart, for the pericardium cohered at every point.

The part which I now show you, is the left ventricle laid open. Here are the aortic valves, rather thickened; but the mitral valve is the seat of great disease, thickened, cartilaginous, and ossified. The two portions of which the valve consists, are completely grown up together all around, and form a pouch. That portion of the internal membrane of the heart which proceeds from the aortic valves to form the mitral valve, which you see is continuous, is diseased,—grown up together into the form of a pouch. The opening of the valve is here necessarily rather smaller than it should be. It is not, however, by any means so reduced as you frequently see it. The aortic valves are also thickened and fleshy to the feel. Notwithstanding the opening of the mitral valve is necessarily diminished, it is by no means so diminished as in many cases I could show you. Here it is from beneath, and here you see it from behind. Instead of opening immediately forward, there is a sort of channel from a cohesion, a growing up of the two leaves of the valve. There is ossification here of the valve; and the bone is very well seen if you look at the valve from the auricle. It has been deposited, as usual, under the lining membrane. The bare bone here has been in contact with the blood, the internal membrane having given way and exposed it.

I have said that frequently the diminution of the opening is more considerable than what you have just seen, and here is a specimen of the same disease precisely, where the opening is much more reduced. You see the pouch-like appearance of the mitral valve; the opening here is very inconsiderable; I should say it is not more than a third or a quarter of its natural dimensions. Here is another instance of the same effect, which unfortunately is very common; you see the opening from the left auricle behind into the left ventricle. It is well to look at these things, because I know that many persons who are not in the habit of opening hearts do not easily discover what is disease and what is not. Persons easily fall out of the way of detecting morbid appearances in the distractions of private practice. Although this is familiar and common to us, yet when persons are not in the habit of opening hearts, there is great difficulty in detecting even considerable morbid appearances. Here is a third specimen of the same thing.

When it is in the very highest degree, as you notice it here, the opening is a mere chink; you would hardly suppose this to be the mitral valve; the blood must have had extreme difficulty in passing through, and the patient could not have lived a moment if the disease had become more intense than in this specimen. The man from whom this was taken came to the hospital in a dying state, and died before the end of the week; you will find these appearances in accordance with the account I have given to the public. It is the subject of my second engraving. I have said, that

"In the natural state the valves are translucent, fine, and flexible; when the subject of chronic inflammation, they become opaque and yellowish, thick and rigid. These changes are seen in dead subjects in various degrees, and may be considerable without reaching such a point as sensibly to disturb function." You cannot tell by any sign, during life, that a valve is much thickened or opaque, or even diseased in any way; you can only say there is an impediment to the passage of the blood. If a valve is ever so much diseased, and does not afford impediment to the passage of the blood, or cease to prevent its retrogression, it is impossible for any one to tell before death that it is diseased; it is only a change that impedes function which can be discovered, which obstructs the course or ceases to prevent regress.

"Their progress (I continue) also advances with various degrees of celerity. The surface of the valve may retain its smoothness, though frequently we observe asperities from excrescence or deposition."

In this preparation the valve, for example, retains its smoothness; it is particularly smooth, whereas in the heart I now show you the valve has numerous asperi-

ties from deposition. This is the case with all the valves; sometimes they are perfectly smooth, very hard, and thickened; in other cases they grow rough.

"The induration varies in different points, so that one portion is partly translucent, while another is not only opaque and rigid, but even bony." That is the case here. There is a spot here which is translucent, quite smooth and thin, while in another part of the same valve it is not only opaque and rigid, but even bony; it varies in different points.

"The induration at length amounts to cartilage, and the part creaks when cut; the last stage is complete ossification. As the thickening and induration proceed, the opening becomes narrow, both from the thickening of the edges and from the approach of the portions of the valves towards each other." The mere thickening of the edges will of course lessen the opening, but the opening is lessened also from another circumstance, namely, as the valves approach each other they become rigid, and will not yield to the stream of blood.

"The several portions of the tricuspid and bicuspid or mitral valves grow up completely into a membrane with a very small aperture in its centre." Here you see they have grown up completely into a membrane with an aperture in its centre. I have not an instance of it in the tricuspid valve, for disease in the tricuspid valve is comparatively very rare.

"And this aperture is sometimes, as seen from the ventricle, and generally when viewed from the auricle, not circular but longitudinal, a mere slit. When seen even from the ventricle it is sometimes longitudinal; in this specimen the aperture, as seen from the ventricle, is longitudinal; sometimes, however, it is round, as is here seen, but generally when viewed from the auricle it is not circular, but longitudinal. If you look, in the present instance, at it from the auricle, it is not circular but longitudinal; and if you look at any of the preparations I have shown you from the auricle, you will find the openings of that shape."

In many cases it is a mere slit. Respecting the particular longitudinal form,—the *crescent* form of it, and the direction of that crescent, as far as I know, the observation was made first by Mr. Adam of Ireland; and that gentleman remarks that this slit is usually of a crescent form, with the concavity towards the root of the aorta, and the convexity backwards. Now, you observe here that the concavity is towards the root of the aorta, and the convexity backwards. Mr. Adam's remark I believe to be perfectly accurate. The aorta is nearer the septum than the opening of the mitral valve, and you see the concave part of the slit towards the root of the aorta, and its convexity backwards.

I have said—"And the extension of the valvular membrane is sometimes so considerable that it appears to project into the ventricle in the form of a pouch or a funnel." This the French have described. "The semilunar valves stand firm and convex, as if distended by repletion of their sacs, and grow up so as to leave only a small round or triangular opening in their middle." In this preparation which I have already shown you, here is the aorta and its three semilunar valves; they have grown up so as to leave a tricornered opening. You see that this preparation exemplifies what I mentioned of the valves affording an impediment to the fluid, from becoming so rigid that they cannot get out of the way. You see that their convexity is just as if they were distended with wool. When the impediment to the progress of blood is considerable, I have said "the auricle behind is usually dilated and sometimes attenuated, sometimes of its natural thickness, sometimes, though rarely, thickened. Whether it be an auriculo-ventricular opening or a ventriculo-arterial, this effect is the same. Occasionally, when a ventriculo-arterial opening is narrowed, the ventricle behind is dilated or thickened, or both; but frequently this is not the case. The auricles suffer from being muscular to only a certain extent, and throughout of only insignificant thickness compared with the ventricles." Now, in this instance, behind the diseased spot the auricle is very much dilated,—much larger than it ought to be. It is not, however, through an impediment necessarily of the mitral opening that the left auricle will become dilated. If the obstruction is at the mouth of the aorta, still the auricle will often become dilated just as if it were at the auriculo-ventricular opening, and that is the case in the present instance; sometimes you will see that it is the *right* auricle that suffers dilatation, though the obstruction be at the mitral valve, or even at the mouth of the aorta; at so great a distance will obstruction produce dilitation.

The adhesive process exterior to the heart frequently binds down the proper auricles, so that they cannot be discovered till torn up. That is the case here, though the sinus of the left auricle is greatly dilated.

Let us now consider the symptoms in this case. In the heart there was heard a very loud clear sound after the pulse, just when it is supposed by Laennec that the auricles contract. This loud and clear sound not only was heard after the pulse immediately, and was followed by a pause, but it was heard loudest at the upper part of the cardiac region: that is, where the auricles are situated. Of

this there could be no doubt: it was heard by several gentlemen as well as myself, and among others by a physician who is very familiar with auscultation, and he was very much struck with the loudness of the sound in the auricular region immediately after the pulse; he concluded with me that of course the auricle would be found dilated, and so you see it is. After this loud clear sound came a pause.

Some difference of opinion exists as to the time of the contraction of the auricle; some maintain that it takes place immediately after the contraction of the ventricles, some immediately before. Now, I do not mean to make any positive assertion on the point, but one reason why I think Laennec is right, is this, that the sound ascribed by him to the auricles, is loudest in the situation of the auricles,—that affords a great probability that he was right. Here was a case of dilatation of one auricle, and the sound was particularly loud in the situation of one of the auricles, and occurred after the pulse and the heart's stroke.

Respecting, however, the other sound—the sound that took place when the pulse occurred, it must have arisen from an obstruction to the blood leaving the left ventricle on its way into the aorta. Now, I think you will see clearly that though the disease was here chiefly in the mitral valve, the aortic valves being only slightly thickened, not sufficiently to cause any impediment, yet it is evident that the disease in the mitral valves must have greatly impeded the flow of blood from the left ventricle into the aorta. I do not know that this has ever been attended to, but there being a great deposit of bone midway between the root or ring of the mitral valve, and its edge, there is a great projection of bone from the outside of the pouch of the mitral valve into the left ventricle, below the aortic valves, and this must have presented a very considerable impediment to the exit of the blood from the left ventricle. If I bring the cut portion of the ventricle together, you will find it difficult or impossible to pass your finger from the aorta into the left ventricle, or the reverse; that you meet with great difficulty from this bony, solid, immoveable, side of the mitral valve, though from no disease of the aortic valves; your finger passes them easily. The bony valve stands out into the left ventricle just there, and must have occasioned great obstruction during life.

I do not recollect to have seen this noticed any-where,—the circumstance of disease of a valve of one aperture, affecting a different aperture; indeed the obstruction is not really of the aortic opening, but just before it. This quantity of bone offered no impediment at all to the progress of the blood through the mitral valve; for the deposition has taken place in an outward direction, and caused the pouch of the mitral valve to be permanently extended. This shows the truth of what I said before; that auscultation will not tell you what valve is diseased, or how much it is diseased, or whether any valve is diseased at all; it will only tell you that there is an obstruction, and where that obstruction is, but not what that obstruction arises from. I recollect having had two persons under my care, with a strong bellows-sound at the moment of the pulse, and in both instances loudest in the right half of the cardiac region, and not in the left. I of course concluded there was an impediment to the blood from the heart into the pulmonary artery, which is a very rare occurrence. On opening the parts, the pulmonary artery was sound—the valves perfectly sound; but there was a mass of cartilage extending from the pericardium down into the substance of the heart, and pressing on the right ventricle just below the origin of the pulmonary artery, precisely where this mass of bone does in the left ventricle. The only difference between the cases was, that in the others there was a mass of cartilage in the substance of the heart, encroaching upon the right ventricle, impeding the passage of the blood; and here it is the mitral valve become bony, and encroaching upon the left ventricle, close to the spot of the blood's exit. It is impossible to force the finger from the aorta into the body of the ventricular cavity, and the bellows-sound at the moment of the pulse is fully explained. The disease of the mitral valve has also certainly lessened *its* opening, but not very considerably, as the chief disease is not towards its edge; and the auriculo-ventricular openings are in health so much larger than the ventriculo-arterial, that they will bear some reduction without any impediment to the flow of blood, and without bellows-sound. Whereas the ventriculo-arterial openings being smaller, afforded impediment and bellows-sound, from the least loss of their proportion to the cavity of the ventricles.

You see that the disease has not been confined to the heart, but has extended to the aorta. Here are points and patches of yellowish substance under the inner coat of the aorta, which would have been followed by ulceration of it, or have become bony. In the latter case, the inner coat would then have given way, and the blood would have rushed over the bare bone, as it must have done in the interior of the mitral valve.

A circumstance noticeable here, and which you will observe in many diseases of the heart, was, that some little time before death, little or no bellows-sound was to be heard, nor was there any strong impulse of the heart. When the person becomes very much

enfeebled, the blood is impelled with such slight force from the different cavities of the heart, that the opening, though diminished, is nearly large enough for the passage of the quantity of blood that has to escape, and little or no bellows-sound is heard; and often when the hypertrophy is considerable, you will just before death by no means find the impulse strong; so that if you had not made examinations earlier, you could not say the person was labouring under hypertrophy of the heart, at least not say so positively.

GASTRITIS.

There were some patients presented, Gentlemen, amongst whom were three women, and one of those had laboured under gastritis. The patient's name was Mary Turner, aged 22, and she had been ill four days. She came here on account of pleuritis it was said, and I was desired to see her on account of pleurisy. On examining her, I found that she had no sharp pains about the chest; she had experienced these, she said, before she came in, but on examining they were not then present. She had great pain at the epigastrium, increased on pressure. It was very tender, and there was a burning sensation in the stomach, especially when she took any-thing into it. There was great tenderness in the left hypochondrium. You will very frequently find tenderness in the left hypochondrium when the stomach is affected, from the larger curvature being situated there. She had headach, and felt exceedingly drowsy and weak. Her pulse was full and soft; it was not hard and sharp as it frequently is in pleuritis; but, as in affections of most mucous membranes, it was full and soft. The tongue dry, and faintly brown. Though it was a case of gastritis, the tongue was not red at the back, at the edge, or at the tip. It is by no means a necessary consequence when there is affection of the stomach that the tongue should be red, either generally or at any particular spot, though it frequently is so. She told me she had been ill just in the same way last year for four months. Her face and neck were universally and deeply flushed. I cured her very simply by bleeding her to a pint, putting her upon slops, and giving her a dose of castor oil every day. That was the whole of the treatment, and from being exceedingly ill she was perfectly well, and presented on the 17th, having been in exactly a fortnight. There were no sudorifics given, no antimonials, no mercury—nothing at all but starvation, one free bleeding (bleeding till she fainted, and a pint was necessary for that purpose), and castor oil daily.

LEUCORRHŒA.

There was likewise a case of leucorrhœa, which it may be useful to consider, as showing that one treatment is not always required, in cases of discharge from mucous membranes. Leucorrhœa is very often an effect of mere general debility of the system, and particularly of the vagina and uterus; but it sometimes is attended with very considerable irritation,—even inflammation of the vagina, and that inflammation may extend to the womb. Many cases of leucorrhœa begin as an active inflammation of the vagina, and it is impossible to distinguish them as far as I know from active gonorrhœa—perfectly impossible, except that you may, from the situation and life of the party, sometimes conceive gonorrhœa to be impossible. In this case, I have no doubt, it was inflammatory leucorrhœa; for whilst the woman was menstruating, she was exposed to cold and wet. The symptoms were, a frequent desire to make water, and invariable relief on making it. She had a bearing down both backwards and forwards, and a profuse yellow discharge from the vagina. She had nausea, which is very common in all affections of the womb, and the catamenia had suddenly stopped. The hypogastrium, indeed the whole region below the stomach, was excessively tender, and she was very costive. Here were all the signs of active inflammation—great costiveness, great quickness of pulse, heat, and even pain; and that inflammation was undoubtedly most in the pelvis, from the pain being there, and increased on pressure immediately above the pubes. It of course was low down in the pelvis, from the bearing down both backwards and forwards; and clearly in the vagina or uterus, on account of the profuse discharge from the vagina.

Notwithstanding this was a case of leucorrhœa I had her bled immediately to twenty ounces; had her put upon slops, and a number of leeches were applied to the epigastrium day after day, and she was purged regularly with castor oil; twenty leeches were put on again and again. When all the inflammatory symptoms were got the better of (and sometime afterward they re-appeared, and leeches were again required) I ordered her an injection of the nitrate of silver, two grains to an ounce of distilled water. She was going on well with this, and I kept her on milk, when, on catching cold, she was seized with a relapse, pain and tenderness, and a bearing down, so that I found it necessary on the 4th, and again on the 8th of this month, to have recourse again to venesection. This got rid of the inflammatory symptoms, and nothing but a profuse discharge now remained. I had no hesitation in continuing the nitrate of silver, for it never gave her any pain; indeed in a short time I increased it to three grains to the ounce, and that scarcely

produced the least pain, but it checked the discharge. She now got up, and the discharge lessened so much, and she felt so strong and well, that she told me she did not think it necessary to stay here any longer, and she went out, taking a quantity of injection with her. I am quite sure that the nitrate of silver forms one of the best injections you can employ in these cases. I will not say it is better than any, but I am quite sure that it is inferior to none, and better than many.

ACUTE RHEUMATISM.

There was a woman presented who came in with acute rheumatism, and she had also pain in the chest, particularly over the region of the heart, and a dry cough. I had recourse, not to local bleeding, but to general bleeding, and vinum colchici, half a drachm three times a day, under which treatment she got well, but the case presented nothing novel to you.

There was a case of *bronchitis*, in a man, sent away cured, and one of rheumatism. But the most interesting cases were,—the disease of the heart, the gastritis, and the inflammatory leucorrhœa.

UNIVERSITY OF LONDON.

REPLY TO A SENIOR STUDENT'S ACCOUNT OF SOME RECENT EVENTS IN THE MEDICAL SCHOOL.

To the Editor of THE LANCET.

SIR,—"Audi alteram partem," is so peculiarly characteristic of your useful and valuable journal, that I shall make no apology for intruding the following observations upon your notice.

Conscious, Sir, as I am, that any published accounts of intestine dissensions taking place amongst any part of the members of an institution (which, although rising, is but yet in its infancy) must be detrimental to its interest, I should have been the last person to open a correspondence on the subject which occupied the pages of your last Number. But the lists having been entered, the gauntlet thrown down, I lose no time in accepting the challenge, and I have no doubt of being able to prove the party feeling, and incorrectness, of at least some parts of "the full and correct statement" given by your correspondent.

Last session, as your informant has stated, certain gentlemen, seventeen in number I believe, did make complaints to the Council, of the defective state of part of the anatomical instruction given in the University of London. But what were those complaints? They did not then pretend to say, that Professor Pattison was unable to teach any part of anatomy. No! they dared not then make so unblushing, so groundless a charge. The spirit of turbulence and disaffection had not then risen to such a height; it had not then broken down all the mounds and bulwarks of decency, decorum, and respect. They only said Mr. Pattison had given an incomplete course of general anatomy, which, I believe, was not then much cultivated in any of the metropolitan schools; that he had not given the descriptive anatomy of the viscera and some other organs, in a sufficiently comprehensive manner. Whether there was or was not a cause for these remonstrances, I will not undertake to determine; but what was the result? Why, in order, if possible, to satisfy even the most captious and discontented, Mr. Bennett was, at *Mr. Pattison's request*, made a joint professor with him; and in order fully to meet the wishes of these gentlemen, the abovementioned branches were comprehended in Mr. Bennett's division, whilst Mr. Pattison continued lecturing upon that department of the course in which he had given the greatest satisfaction. But the demon of mischief once raised, was not so easily to be exorcised. Many of these same gentlemen again came forward, and entered their formal protest against the *total* incompetency of their Professor, and demanded his immediate expulsion. What a goodly set of judges! I had, indeed, imagined at the commencement of the present session, that the storm was finally hushed, for in a conversation I had with a gentleman who was very active in the affair last year, he expressed himself quite satisfied with the new arrangements. But, alas! the tempest, though partially quelled, had not finally subsided. "A Senior Student" says, "meetings were held, at which no personal feeling was expressed, no party spirit evinced." Could any meeting be designated by such terms, when the opponents of the measure, the advocates for their Professor, were denied a hearing? Yet such was the case. At the first meeting on the subject, the arguments of those who were the friends of impartiality and order, the foes of injustice and confusion, were answered, not by calm debate, but by noise and clamour, and the open *modest* avowal, "We are determined to do it, and we will have no opposition." The address thus modestly proposed and carried, taxes Mr. Pattison with "a want of systematic arrangement, a superficial manner of treating the connexion of parts, the commission of palpable uncorrected errors, a want of sufficient interest, and an inaptitude in communicating information." I shall speak of these charges separately.

For a refutation of the first, a plain state-

ment of facts will be quite sufficient for your medical readers. Mr. Pattison first gives us the anatomy of the bones, then the ligaments, next the muscles, afterwards the blood-vessels, and, lastly, the nerves. If this be not system, I know not the meaning of the term. In rebutting the second charge, I would merely refer any student to the manner in which he demonstrated the relative connexions of the carotid artery, and then state, that Professor Pattison did not promise giving us the relations of parts so minutely in the first division of his course, as in the second, where he devotes his attention especially to surgical anatomy; and I would ask any person who has attended his lectures on the bones, which are just concluded, whether he has not amply fulfilled his pledge.

The commission of palpable and uncorrected errors, is the next great crime. What lecturer is there, I would ask, who does not now and then make use of a term he does not exactly mean? Should a man with the scrofula in his hand, call it the clavicle once in three times, what tyro in anatomy would be deceived? Certainly, should any one be so misled, he would deserve to be so for his pains.

The next, namely, want of sufficient interest, is almost too frivolous to be mentioned, as it must be known to all, that the descriptive anatomy of the bones, muscles, &c., is a dry study indeed.

But now comes the "ne plus ultra" of accusations, "inaptitude of communicating information." Now it seems to me, that this inaptitude may attach itself quite as readily to the accusers as to the accused. I confess myself to be one of those ignoramuses who do reap some benefit from the lectures of our excellent Professor. True, I have heard some of these *puissant judges* say, they were just as wise after one of his lectures as before; and verily I believe them, and with this belief is mingled no small a portion of commiseration.

Perhaps your readers may be convinced, that there was not that great excess of kindly feeling existing, when I inform them, that one of the clauses of the address at the time it was passed (though afterwards privately erased) was, that the *defect in his articulation* rendered him unfit for his chair. A more unkind and unfeeling imputation could not have been made. That Professor Pattison does labour under a little natural defect of utterance cannot be denied, but no man, with the least tincture of veracity, would for one moment contend, that it prevents his being perfectly understood.

This address was certainly supported by some gentlemen of distinguished talent, whom I was sorry to see in so bad a cause; but many junior students (excellent judges no doubt) were foremost in the ranks; and, indeed, the first resolution was proposed by a student of this session's growth. Where these gentry picked up their vast stock of anatomical knowledge, I cannot even guess; nothing, however, less than a miracle could, in so short a space of time, have made them such critics of their professor's abilities. The transformation of surgeon's apprentices into first-rate anatomists, assuredly needs the aid of something quite as wonderworking as Harlequin's wand.

When "a Senior Student" said the address was signed by sixty students, he should also have stated the full number attending the class, which I think is 160, forty of whom immediately signed a memorial in favour of their professor. Sixty students therefore remain neutral, many of whom, to my certain knowledge, are friendly to Mr. Pattison; and when, from the sixty signatures, you subtract those who can know very little about the merits of the case, and the number of those who are carried away by the tide of influence be also considered, I think it will appear that the voice of the students is not so unanimous on his side the question as "A Senior Student" would intimate.

Your correspondent then proceeds to condemn the feelings Professor Pattison exhibited, on finding what was going on. Can you, can any person, wonder at a manly expression of indignation shown by a professor, on discovering that his own pupils were holding meetings to decide upon his eligibility to fill a chair, conferred upon him by such a combination of illustrious individuals as compose the Council of the University of London? Was it not natural, that, placed in so peculiar a situation, he should exert all the power vested in him? Was it not perfectly justifiable in him to tighten the reins of scholastic discipline as much as lay in his power? I leave it to any candid, unbiassed mind, to answer these questions; and I shall be much surprised if the conclusions come to will not be, that it "*indicated any fear of inquiry*," or that it proceeded from a wish to intimidate any member of his class. Irritated, vexed, harassed, and even bearded by those whom he was engaged in instructing, was this the time for the chairman of one of these unruly meetings, to demand a certificate of attendance? Surely not! "Nemo mortalium omnibus horis sapit." He must have been fully aware of the result of his application before he made it. Had he waited a more convenient opportunity, his errand would not have been bootless. "A Senior Student" next taxes Professor Pattison with "peremptorily ordering" the students to descend from the top seats, and dwells very much upon the reiteration of the command.

One would really imagine, that both the eyes and ears of this gentleman were blessed with a very high magnifying power. Our Professor did not "peremptorily request." The words he used were, as nearly as I can recollect—"Gentlemen, may I request you will have the goodness to come down, and fill the lower part of the theatre first? The greater part immediately complied, but three or four maintained their places as immoveably as if they were brazen statues. Then follows a great deal about being "*ordered*" to sit in a certain part of the theatre, committing an insult upon them as "*men and gentlemen*," and so on. Now whatever may be the opinion respecting the judiciousness of Mr. Pattison's request in the first place, there can be but one upon the propriety of compliance on the part of his pupils; but if, as "*men*" and as *pupils* they were too *spirited* to obey a "*command*," as "*gentlemen*" they ought to have known enough of *politeness* to comply with a moderate request made in a gentlemanly manner.

We read afterwards a great deal about the determination of the students to assert their independence, by placing themselves in an insulting row of defiance. Was this "*gentlemanly*?" Mr. Editor! it seems to me that, in the present enlightened times, students are not content with being students. No! they must rise superior to such a vulgar station, and put themselves at any rate upon a par with, if they do not take precedence of their instructor. Now I am of the old fashioned opinion, that whatever the rank in life of a pupil may be, as long as he is a learner, there is a broad line of demarcation between him and his teacher, and that a certain degree of respect should be entertained by the former for the latter. Mr. Pattison very properly took down the names of these high-spirited gentry, and then such hissings and hootings followed, and such *refined* behaviour was exhibited, as would have disgraced a bear-garden, much more such classic ground as a University. What followed, you will immediately see, was only a matter of course.

One part of the address I had nearly omitted; it relates to the desertion of the students to attend anatomy elsewhere. Such may be the case to a greater extent than I am aware of, but I do know some who entered the class of anatomy at St. Bartholomew's, because they were attending surgical practice there, and could not return to the lecture at the university in time. This was before Mr. Pattison's hour was changed.

And now, Sir, allow me once more to deprecate the motives which led to the publication of the above transaction in the pages of THE LANCET. "A Senior Student" would have us believe that a paramount regard for the interest of the institution above all other considerations, induced the measure. If such be his feelings, the mode of expressing his attachment was indeed a remarkable one. The exposure of any internal jarrings to the world, far from raising the establishment in which they occurred, in the public estimation, would only tend if possible to crush it in the dust. But I am very much afraid that such praiseworthy intentions did not prompt the pen of your informant. Some of the agitators in this revolutionary proceeding have even said in my hearing "they did not care a curse for the University," and such *warm advocates* would of course do all in their power to further its interests. But happily the permanent and triumphant success of the University of London does not depend upon such lukewarm friends or disguised enemies. Founded by the great advocate for liberal education, and established upon the broad basis of science, it shall, it must, it will, eventually overcome all obstacles. Far be it from me to deny any person the right of private judgment; it is the glorious boast of an Englishman; but I must enter my protest against the unheard-of proceedings carried on during these last few weeks, by my fellow-students. Picture to yourself, Sir, an assembly of mere youths, many of whom have but just commenced their medical studies, met together to decide upon the ability or inability of a professor who was engaged in *teaching* anatomy before many of them had an existence. The very idea is preposterous, its most prominent features are cruelty and injustice; for what can be more unjust than for *them* to make any formal decision at all? What more cruel than for them to drive a man ignominiously from the high station he at present fills, and blast his "hard-earned reputation" for ever.

But your correspondent would have the public believe that all the talent and industry of the students are ranged on his side. This is a decided misstatement. Our worthy Professor can number amongst his adherents many highly-talented and laborious individuals, whose names have not been undistinguished at the awards of prizes, &c., in the medical classes.

The statement of incompetency is completely overthrown by the high testimonials Professor Pattison brought with him, and by his great reputation as a teacher in the American and other schools. For myself (and perhaps I can lay equal claim to the title of a senior student with the gentleman upon whose observations I have now finished my comments) I can only say that I have regularly attended Professor Pattison's lectures for two sessions, and have always found him diligent, attentive, and laborious

in the discharge of his duties, and confident am I that any student who pays sufficient attention to his lectures, cannot fail of reaping an abundant store of anatomical knowledge.

In conclusion I beg leave to state that I have no personal ends to gain in writing the above. I have not the honour of being even personally known to Professor Pattison, never having had five minutes' conversation with him in my life. My sole aim has been to divest the circumstances of their false colouring, and to set the affair in its proper light. With regret for occupying so much of your valuable hebdomadal, I have the honour to be your obedient servant,

VERITAS.

University of London,
March 7, 1831.

THE LANCET.

London, Saturday, March 19, 1831.

THE assault committed upon the members of the College of Surgeons, under the direction of their President and Council, has elicited from the whole profession the most unqualified expressions of indignation. The extent of the pernicious and horrible power enjoyed by the Council is now fully understood by the profession and the public, though not, it would seem, by the President and the Council, who appear to be somewhat deficient in this respect, as they will find ere long that they have exceeded most unwarrantably the legitimate bounds of their authority. Many are the unsuspecting and kind-hearted creatures who have believed that the Council in publishing their restrictive regulations have been influenced rather by errors of judgment, than by improper feelings towards the profession and the public. But this delusion now no longer exists, one feeling every-where prevails, and it is universally acknowledged that the President and Council have *intentionally* treated the members with the grossest insults, have passed the most restrictive and infamous regulations for adjusting the payments made by students, and that they had determined, even at the hazard of human life, to hold no open or free discussion with men whom they had so long treated as their servile inferiors. The outrage committed in the theatre of the College on Tuesday se'nnight is an event worthy of record in the most important pages of the history of this country, for few circumstances have ever occurred in connexion with the affairs of a learned profession more decidedly calculated to excite astonishment in the minds of informed men. If the despicable and self-perpetuating Council will take the trouble to look into their charter, they will find that the Royal College of Surgeons in London is a body corporate, consisting of President, Council, and Commonalty, or members, and that the PROPERTY of the College belongs to THESE THREE ESTATES. Well, then, these tyrannical ruffians have the impudence to assert that the members who form the immense majority of the corporation, have no right to discuss quietly in their own theatre a subject relating to the interests of an important portion of their brethren! Further, will these impudent upstarts have the unparalleled folly and impudence to assert, that the members have not a right to enter the College at any period of the day, so that they do not interrupt the performance of those public duties which the College was designed to execute? If the members choose to take possession of the College, and turn the present occupants into the street—if they choose to lead the fellows out and throw them into the Thames, how could the junto proceed against the members, except by an action of ejectment? True it is that the charter sanctions the self-electing principle by which the members of the College are placed in their offices; and, further, declares that the President and Council are empowered to make by-laws for the government and regulation of the College; but the charter does *not* declare that the property of the College belongs to the govern-

ing body exclusively, but in common with the members at large. Further, the regulations of the President and Council are not valid, if they be in opposition to the common or statute law of the land; and we know of no law by which the members of a corporation can be excluded from their own property, unless the minority be deprived, under agreement, of the privileges of possession, by the sanction of the great majority of incorporators. Here, a miserable and contemptible knot of worthless men, because they are placed in the possession of a little brief authority, have so far lost their wits as to believe that they may lord it over five or six thousand of their equals in rank, and their superiors in talent. There is a wide difference between the power to make by-laws for the government of an institution, and the power to shut out from possession in such an institution. Let the members of this worthy Council examine the bond under which they hold the Hunterian Museum, and they will find that the Museum is to be opened two days in each week, four hours on each day, for the admission of "Fellows of the College of Physicians," and of "Members of the College of Surgeons," and of persons properly introduced by them. Here there is a term specified for the admission of members, and it might be questionable whether the parties have a right to enter at any other period. But in the charter there is no time specified for admission into the College, and we contend, therefore, that the members have a right to enter that institution as frequently as the Council themselves, so that they do not interfere with the ministerial or executive duties of the individuals who are appointed by the charter to frame by-laws for the government of the institution. From the terms of the bond to which we have already adverted, it is obvious, beyond all dispute, that the members may meet in any number in the museum (so that they do not injure the preparations) and consult upon any question relating to the welfare of the College; and if the President and Council continue to close the doors of the theatre and of the College, the members will do well to exercise this right for the common benefit of the institution and of the public. In the same bond it is expressly stipulated that twenty-four lectures, explanatory of the preparations in the museum, shall be delivered annually by some MEMBER of the College. Now, as the Council when they are elected think proper to repudiate the title of "*member*," —think proper to strike their names from the *list of the commonalty* (for they ever speak of themselves as the "*Council*," in contradistinction to "*members*"), we ask why these lectures are not delivered by one of the *commonalty*, by one of the *members*, instead of one of the *Council?* If the Council will not answer these questions now, they shall be made to answer them on a future day. It was never intended by the legislature that the smaller body, the TWENTY-ONE, should enjoy the power of making by-laws for their own advantage, and to the degradation and injury of six thousand members. If those laws cease to operate for the general good,—are contrary to the general convenience of the immense majority of the corporation,—they are contrary to law, and cannot be enforced against non-contents. It was illegal to keep the members out of the College on Tuesday se'nnight until a quarter to four o'clock; and, in the absence of riot, of a breach of the peace, or a prospect of a breach of the peace, it was illegal, in the highest degree illegal, to use force to expel the members from the theatre after the lecturer had finally retired. Be it remembered that the commonalty had not assembled to *oppose* the President; they had not assembled to subvert any of the legal regulations which the Council had adopted for the government of the corporation; but they remained after the final withdrawal of the lecturer, for the purpose of upholding a privilege which had

long been enjoyed by a very large portion of their brethren. Thus they were acting for the *benefit* of the corporation, and not *against its interests*. Besides, as the lecture was one of those delivered in conformity with the bond, the theatre on that occasion was specially placed in possession of the members, for whose advantage the museum had been granted to the College, and the lecture was appointed to be given.

But who shall contend that the members have not a right to meet in the theatre at *any* time to discuss a professional grievance? Is there any man to be found outside the walls of a lunatic asylum so disgustingly stupid as to assert that the theatre was intended exclusively for the benefit of the President and Council, or that the President and Council are invested with the legal power to exclude members from meeting there to adopt beneficial public measures? Let the President and Council show by the charter that they enjoy such power before they again employ a band of ruffians to assault the *bona-fide* proprietors of the property. It cannot be forgotten that when the recent most atrocious outrage was committed, there was no charge whatever of misconduct made against any of the members. The paper exhibited to the members was merely inscribed, "The President and Council require the members and students to quit the theatre;" and that sent to Mr. WAKLEY was thus worded:—"Mr. WAKLEY, you are required by the President and Council to quit the theatre." There was no allegation to the effect that he had created a disturbance; that he had endangered the property of the building; that he had threatened to commit any breach of the peace. But while seated in perfect quietude, and listening peaceably to the cool and dispassionate remarks which Mr. KING was then addressing to the members, he was seized,—seized, because he did not instantly comply with the insolent mandate of the minor part of the corporation,—of the TWENTY-ONE,—and was dragged from the theatre, and repeatedly struck by armed fellows hired expressly for the occasion. As legal proceedings have been commenced, time will show whether the assaulters were justified in their conduct by the enactments of the law under which they profess to exercise their authority. Meanwhile the members must be resolved not to be backward in asserting and vindicating their rights. To all intents and purposes they are as much justified in occupying that theatre for professional purposes as the President and Council; the charter not affording to these latter personages, any, the least, pretension to exclusive possession. When the Council was entrusted with the power to construct regulations for the government of the corporation, it was, of course, presumed, that the prominent features of those regulations would be in conformity with the welfare and convenience of the great majority of the incorporated. Hence it is expressly declared, that those regulations should not be framed in opposition to the existing legislative statutes; or, in other words, that they should not be contrary to the laws of the land. If it were not intended that the commonalty should be partakers of the benefits arising from the corporation, why were they mentioned in the charter? Why were they mentioned as forming one of the three estates, which, united, were to be one body corporate for ever? The Council have inferred that they have the power to exclude the commonalty from the full enjoyment of the property, because they the Council happen to be empowered to make the regulations. They must be taught, however, a lesson of a far different description. They must be made to know that the Council are as much bound to observe the by-laws as the members, and that they are not binding upon either party, if they be framed to operate adversely to the general good, or if they be opposed to the attainment of that object for which the charter

itself was originally granted. It is true that not one of the members has any individual right to any, the smallest, portion of property to be found in the College; but not one of the Council in his individual capacity enjoys a higher claim. With respect to the property of the College, they stand upon the same footing; with respect to the possession of the College, they stand upon the same footing; but with respect to the adoption of laws and regulations, the Council enjoy an exclusive privilege; that is, they can frame these without the advice or consent of the commonalty, tho' at the same time there is no power to enforce them if they are in opposition to the spirit of the charter, or contrary to the laws of the realm. Invested with this power, the TWENTY-ONE appear to imagine that they have the power to exclude from the property the SIX THOUSAND, or that the SIX THOUSAND cannot enter the College, unless at such times and seasons as may be specially named in the decrees issued by the TWENTY-ONE!

Here, again, they will be taught a different lesson, and they shall, before long, be made to show, *how* they have appropriated the immense sums of money which, from time to time, have been deposited in their over-loaded coffers.

LONDON COLLEGE OF MEDICINE.

IN consequence of a sudden call from town to attend an important medical trial at MAIDSTONE, we have only time briefly to call attention to the brilliant meeting which took place at the Crown and Anchor in the Strand, on Wednesday evening, for the immediate establishment of this national institution. The work of medical reform is now, for the first time, *fully* in operation in this country, and we have altogether mistaken the character of British medical practitioners, if it do not go on with wonderful celerity to a splendid and triumphant conclusion.

In our strictures published last autumn on the anomalies which exist in medical law, we repeatedly pointed attention to a projected plan for founding a new College, wherein there should exist equal rights, and equality of titles. That proposal will be fully developed in a report of the proceedings of this great meeting, over which Mr. HUME kindly and ably presided, in the next Number of this Journal, when we shall point out at some length the endless advantages which must result, both to the profession and the public, from a College founded upon such pure and unmixed principles of justice.

PUBLIC MEETING
OF THE
MEMBERS OF THE PROFESSION

At the Crown and Anchor, on Wednesday, March 16th, 1831.

THE great public meeting of the profession which was announced in page 797 of this Journal, to be held this week in London, took place, as advertised, on Wednesday last; JOSEPH HUME, Esq., M.P., in the chair; the arrangements for the proceedings having been made by a committee of twenty-one medical gentlemen who previously assembled in consequence of the announcement.

The lengthened space which a report of this most important and almost unequalled meeting must necessarily occupy, prevents us, at this period of the week, from publishing the full account which so deeply interesting an event in the history of the medical profession demands; we shall, therefore, give in our present Number only a very brief detail of the proceedings.

The occasion was marked by the most absorbing interest, and as early as six o'clock, the hour at which the doors of the great room at the Crown and Anchor were opened, many gentlemen had arrived. By seven some hundreds had assembled, and by the time the proceedings had fully commenced, nearly a thousand gentlemen were present; and it is estimated that on the whole not less than thirteen hundred members of the profession and other gentlemen interested in the progress of science, attended the meeting.

In consequence of the detention at the House of Commons on parliamentary duties, of Mr. HUME, who had in the most kind and prompt manner promised to take the chair, it was half-past seven before the public business of the evening commenced. On entering the room, Mr. HUME and the members of the committee were received with cheers, and in a few seconds the platform was covered with surgeons and physicians of the highest respectability.

The Chairman having opened the meeting, a resolution to the following effect was proposed by W. S. BOWEN, Esq.:—That in consequence of the defective, unjust, and dangerous state of the law relating to medical science, it is absolutely essential to the security of the public health that measures be forthwith commenced to obtain from the legislature an improved constitution for the government of the medical profession.

The resolution was seconded by Mr. WAKLEY in a speech which occupied nearly an hour and a half in the delivery, and which was listened to with the deepest attention. At its conclusion, the meeting rose in a body, and carried the resolution with the loudest acclamations. It may be briefly stated that Mr. Wakley took a review of the present state of medical law and the medical colleges; the abuses which distinguish them; their injurious and oppressive effects upon medical education, the members of the profession, and the public health; the remedial advantages which would be derived from the establishment of a new college of medicine, and the principles on which such a college (conferring upon its members equal rights, and the one general title of "Doctor," and embracing in its scheme the formation of a fund for the widows and children of its members) should be established.

The second resolution, to the following effect, was moved by THOMAS KING, Esq., and seconded by Dr. EPPS, in speeches of great truth and force:—That the establishment of a new medical college on principles in accordance with the progress of science, presents, at the same time, the most practicable means of obtaining a general and complete reform in the system of medical legislation, is calculated to afford the greatest security to the public health, and will most effectually increase the utility, and advance the rank and respectability, of the general body of the medical profession. (Carried with only one dissentient voice.)

At the close of Dr. Epps's observations, Mr. W. W. SLEIGH presented himself to the notice of the meeting, and moved an amendment to the following effect:—That an institution called "The British College of Surgeons in London" was commenced in 1829, and that the laws of that institution being fully adequate for all the purposes to which the resolution just passed was intended to apply, that a committee be appointed to examine into the circumstances connected with it, and report thereon to another public meeting.

This amendment, which was seconded by Mr. JONES, was prefaced by an attack on the character of Mr. Wakley as a public journalist, for having been the means of destroying an institution which was "born in dishonour and perished in disgrace." The opportunity for a reply was afforded to Mr. Wakley, who, after expressing his astonishment at the brazen impudence of his assailant, disclosed to the meeting such a statement of facts in justification of his conduct towards the institution in question, as covered Mr. Sleigh with disgrace, and called down upon him the strongest marks of contempt from the meeting. The amendment was instantly negatived.

The third resolution, moved by GEORGE WALKER, Esq., and seconded by Dr. MORSON, was to the following effect:—That a committee of five, with power to increase their numbers to twelve, be appointed to examine deliberately into the best plan for the formation of a new institution. That this Committee do frame a code of laws and regulations for its general government and operations, and that they be required to report minutely on its several details to a general meeting, to be held within six weeks from the present day. Further, that no resolution shall be adopted by such Committee, unless it have received the sanction of two-thirds of the members present.

The following gentlemen were subsequently proposed and appointed the five members of the Committee:—Mr. Wakley, Mr. Waller, Mr. King, Dr. Epps, and Dr. O'Shaughnessy.

The fourth resolution, moved by WILLIAM MARSDEN, Esq., and seconded by — BURT, Esq., was to the following effect:—That the Council of the College of Surgeons in London have, by a long and continued system of arbitrary oppression and vexatious conduct towards the members of the College, assumed a jurisdiction which can never be constitutionally vested in any corporation, and that by the adoption of by-laws and regulations inconsistent with the interests of the institution, and by the exercise of repeated acts of authority subversive of its objects, they have, in the opinion of this meeting, lost the confidence of the profession, and justly forfeited their privileges and charters;—that a petition, therefore, be presented to the legislature, praying the appointment of a Committee to inquire into the conduct of the President and Council of the Royal College of Surgeons in London, in the administration of their

duties, and the present state of medical knowledge, and to adopt a remedy for the abuses which this meeting believes to exist in its government and constitution. That such petition do lie for signature of members of the College at ——— (*Carried unanimously.*)

The fifth resolution, moved by J. Bainbridge, Esq., and seconded by Mr. Lovekin, was to the following effect:—That temporary chambers be taken, and a secretary engaged, for the accommodation and service of the committee appointed to report on the New Medical College. (*Carried unanimously.*)

After a few observations from Mr. Dermott, and some suggestions from gentlemen around the room, a vote of thanks was passed to the chairman with acclamation; three cheers were given for Mr. Warburton, as the friend of the medical profession, and an enthusiastic round of applause for the gentlemen to whom the profession and the public were principally indebted for the establishment of a new medical college.

The meeting did not break up until nearly 12 o'clock.

PRACTICAL OBSERVATIONS ON THE

PATHOLOGY AND TREATMENT

OF

DEAFNESS.

No. V.

By John Fosbroke, *M.D., Cheltenham.*

The injections which I have mentioned may be used by patients as frequently as convenient to themselves. Mr. Buchanan recommends an injection of vinegar and water, which was Galen's. Galen used injections of scales of iron, boiled in vinegar, to the consistence of honey; or ox-gall, dissolved in strong vinegar, and dropped in warm, and certain troches dissolved in vinegar. Of the injurious effects of instilling solutions of lunar caustic, and other irritants, into the ear, examples constantly occur. The case of a young lady, a patient of mine, which I shall give hereafter, is one instance, and that of an illustrious military commander and statesman is another. The case of this last personage was as follows:—Some new cannon were tried, close to where he was standing, at Woolwich; being taken by surprise, and the membrana tympani not being prepared for the explosion by the regulating action of its own muscles, it was ruptured at the instant, probably by the irregular contraction of the tensores, unrestrained by their antagonists. Much pain followed, and a pure aurist was sent for, who *ascribed the symptoms to torpor of the nerves*!!! and dropped in a solution of lunar caustic into the meatus. Finding its way through the ruptured drum, it produced excessive irritation and violent agony in the internal ear, followed by otorrhœa (inflammation and discharge from the ear), with a succession of abscesses and discharges for two years subsequently, as well as deafness on one side. The injury also exerted an irritable state of the brain and nervous system, attended with constant restlessness and vigilance, and loss of tone of the stomach. After being at Cheltenham, and adopting an alterative system, he returned to London, where a spontaneous diarrhœa came on, which critical occurrence, though it excited apprehension, was followed by recovery of his general health, but not of his hearing. We are taught, by the effects of this hap-hazard application of a violent and empirical remedy, to take heed how we proceed with an organ charged with the highest degree of sensibility, which is not only affected easily by external impressions of an injurious nature in health, but liable to exquisite pain and injury, perilous even to life from injudicious assaults in an irritable state. The ear is to be coaxed by gentle and gradual methods, not stormed by direct attacks and empirical violence.

Introduction of Probes and Injections into the Tympanum.—The Eustachian tube opens a passage for the introduction of injections into the most important cavity of the ear, viz., the tympanum. The practice of probing and injecting the tympanum through the Eustachian tube has been brought up recently in France, and introduced to English notice by Mr. Buchanan, of Hull, who is not an aurist, but a general practitioner. It is, however, nothing more than an old practice, used long since in England, and now again revived. It was first proposed for trial to the Royal Academy of Sciences, in Paris, by M. Gugot, about 1755, and rejected. It was then proposed and practised by Mr. Jonathan Wathen, surgeon, in Devonshire Square, *not a pure aurist*, who gave an account of it, with a plate, in the Philosophical Transactions of the above year. He states that he had cured one case by probes, after every other means had proved ineffectual. "This excited his further endeavours, so that he had pipes of different sizes adapted to a syringe, with which he has since injected the meatus externus with success."

The celebrated aurologist, M. Itard, of Paris (who is also *not a pure aurist*, but was educated as a physician and surgeon, for the French government, very properly, will suffer no man to practise as oculist,

aurist, or as any other species of impostor, who has not been educated regularly as physician or surgeon in the first place) showed me, April 8, 1828, his mode of practice at the Deaf and Dumb Institution of the French capital. His assistant was employed in compressing a body of air into a huge cylinder of brass, by drawing up and down a central piston. To this cylinder was affixed a long tube of gum, or indian rubber, which was regulated by a valve. This tube communicates at its centre, if required, by a branch tube, with a vase filled with aromatic herbs infused in spirits of wine. The process of introducing the air from the cylinder and tube into the cavity of the tympanum, was performed as follows: A deaf gentleman was seated in a chair, at the back of which a piece of wood, covered with leather and hollowed out, was fixed, to steady and receive his head; a *serre tete*, a collar of brass, lined with leather, was placed round his forehead; from its centre there projected downwards a brass forceps, by which the ear-catheter, after its introduction into the Eustachian tube, was fixed. Dr. Itard first introduced into the Eustachian tube, with extreme facility, an elastic gum catheter, containing a wire. He then withdrew this catheter and passed a silver one of the same form; he screwed this last fast into the forceps of the *serre tete*, and then joined its free extremity to the end of the tube proceeding from the air-pump. The valve of the tube being turned by an assistant, the medicated air rushed in with a loud hiss into the cavity of the tympanum. But, by means of the valves, it was admitted into the ear more or less freely, according to the sensations of the patient and judgment of the operator. The patient pronounced the impregnated air very pungent. M. Itard observed, that the cold air became warm in its passage into the tympanum. He has another apparatus, which consists of a huge bellows placed under the ceiling of a low room, and made to communicate with a perpendicular tube, through which the air is conveyed to a metallic apparatus for containing warm fluids. These fluids are propelled by the blast through another tube into the ear-catheter. In this operation, the patient is covered with a skin of leather.

M. Itard's apparatus, as he observed, is much more forcible than the common syringe and ear-catheter used in this country. In the several cases in which I have used the latter, the patients experienced from it not the least benefit whatsoever. The deafness experienced no change, however long or carefully the process was persevered in. I think, nevertheless, that it deserves further trial.

Probes should always be introduced into the Eustachian tubes before any opinion is pronounced affirming the existence of obstruction of those tubes, or before the operation of puncturing the membrane of the tympanum be meditated. The usual criterions of obstruction of the Eustachian tube by symptoms, as I have said, are so fallacious, that no dependence can be placed upon them.

Mr. Buchanan has laid much stress upon previous bleeding and purging, to prevent irritation of the soft parts of the tube and internal ear from the use of the probes and injections. Gentleness and a correct hand, appear to me to supersede the necessity of these precautionary means; at least I have found no occasion to have recourse to them. I have introduced the probes into both my own ears, at the same time without any sensible inconvenience, except very brief and trifling throbbing and soreness. I did the same in the case of Mr. Shedden, a respectable tradesman in Cheltenham, a person of rather full habit and robust health; and others. Ear-probes require very fine bulbs to pass the narrow part of the Eustachian tube, and sometimes should be blunted merely. They are bent to a double curve, like an italic *S*. Two are required; as is demonstrable by recourse to the skull, with the membrane of the tympanum preserved; the oblique position of that membrane, and the oblique facing of the small bones, and of the handle of the malleus especially, towards the Eustachian tube, expose both to the bearing of the probe. Rude contact may, therefore, injure both, but the sensibility of the tympanum generally gives warning of the fullest extent to which the probe can be introduced with prudence. The French pupils habituate themselves to the use of the probes on the dead subject.

Students, endeavouring to form some judgment of this practice upon the dry bones, should be aware, that the angle from the base of the anterior plate of the pterygoid process to the ear, is more acute in the skull than in the living parts; so that the insertion of the probe into the tract of the tube, after passing the nostrils, requires a curve, which renders the introduction extremely difficult; also the tract of the tube, when preserved after the bones are dried, is actually narrower than in the recently dead or living subject.

The passage of the Eustachian tube is in the line of the styloid and vaginal processes; it is roofed over by the root of the latter, and at the place of these processes the tract is very narrow. A small gold-wire probe, flattened at the end, may be passed, and, in the recent skull, when it is approaching the tympanum, there is a sensation of breaking through some intercepting membrane; at that moment it is actually in the tympanum, and close to the manubrium of the malleus.

The introduction, therefore, requires care and attention to minute circumstances, which qualities are the parents of success and precision in the manipulations of surgery. The distance from the inner edge of the square bone of the palate to the tympanum, averages about 2¾ inches and ¼th, and from the nasal bones to the tympanum, about 4½ inches. So much for planning the operation on the skeleton.

In introducing the probes in the living subject, it is first necessary to get the precise curve, otherwise the probe will be obstructed in the passage of the nostrils, by touching against the sides, and exciting sneezing. If the double curve be correct, having the concavity of the first curve turned outwardly, its passage from beginning to end will be uninterrupted. In passing the probe, the hand should be raised to the level of the nostrils. The point of the probe should be kept close to the alæ of the nostrils, and the back inclined towards the septum and vomer without contact. When arrived at the base of the inner plate of the azygous process of the sphenoid bone, and extremity of the square plate of the palate bone, it is inclined rather outwards and upwards in the direction of the articular process of the lower jaw. Having entered the tube, it passes into the tympanum, giving notice of its situation by the sensation peculiar to the membrana tympani when touched. Insinuated gently onwards in this manner, like a bougie into the urethra, its regular progress is intimated by its unimpeded transmission.

The puncturing of the Membrane of the Tympanum.—With respect to the puncturing of the membrane of the tympanum, as far as individual conclusions, from a certain number of facts, and a deliberate consideration of all the circumstances connected with deafness, enable me to give an opinion, that opinion is unfavourable to this operation in almost every case. The inlet of cold air and moisture into the ear, on the view of sound experience, incurs the most unfavourable consequences to the hearing in exchange, for prospective benefits are very rarely realized. Puncture of the m. t. can seldom be of use, for it does not often happen that the obstruction of the Eustachian tube is the *sole* cause of the deafness in any case. In order to reach the middle cavity of the ear with injections, before I was acquainted with the practice of injecting the Eustachian tube, I punctured the m. t. of one ear twice in a case of extreme deafness, where the operation, under any result, could add little or nothing to the evil. The hearing was quickened for a few days, and then rendered worse. One patient wrote to me: "I applied unfortunately to a celebrated surgeon, who, without making any inquiry, whether the operation were applicable to my case or not, punctured the tympanum of the right ear, of which, from that time to the present, I have had no use. I would observe, that I heard for about two days after the operation, when I became infinitely worse than I was before." In extenuation of the blame imputed to this personage, it must be observed that experience of the results of puncturing the m. t. was then too new and scanty to have indicated to the operator the probability of permanent injury. M. Itard told me that he had performed the operation a *hundred* times with none but injurious consequences, and decisively condemned it. He intimated that he had been misled by Sir A. Cooper's statements. One of Sir A. Cooper's patients informs me, that Sir Astley should now say, that "where it has been of service in one case, it has done mischief in twenty." It may improve the hearing for a time, though the Eustachian tubes are not obstructed. The improvement arises probably from the conveyance of sound within the cavity of the tympanum, and nigher to the more exquisite structures of the labyrinth. After puncturing the membrane, a crack is heard by the patient like the tearing of parchment. The smaller the opening the better. There is a case where it may be of use—namely, where matter is collected in the tympanum. A very good case of this kind occurred lately in the practice of Mr. Liston of Edinburgh, and was related to me by Mr. Mackenzie, the demonstrator at the university of that place. The patient was Professor Wallace's son; the morbid action was changed after the operation, and he entirely recovered his hearing.

No. VI.

It is impossible to discover the membrane of the tympanum in all deaf patients with the naked eye, with all appliances and means to boot. But the external ear and head ought to be moved in various directions, and a full light thrown in, before the attempt is abandoned.

As the hearing becomes imperfect, so also does the associated action of the auricle. By drawing it almost over the concha, the voice is heard more loudly and distinctly by the deaf. When injecting the outer porch with warm fluids, I have observed a free and curious movement of the concha and skin of the passage like that of the scrotum in warm water. When the auricle is cut off, Sennerts says that the impressions of vibrations on the ear resemble the rushing of waves.

In some cases of deafness without discharge or disease of the external auditory

passage and Eustachian tube, I have observed a want of force and vivacity in the impressions referred from the auditory nerve to the brain, with a corresponding dulness in the mental perception of sounds. The obscurity of impressions from without appears to be owing to the auditory nerve being occupied by sounds or sensations from within, created by an action existing in the brain itself, and producing sonitory impulses on the nerves of hearing. Since this form of deafness occurs generally in conjunction with nervous diseases, as hypochondriasis, it is probably owing to participation of the auditory nerves in the morbid condition of that system to which they belong, and not to any local affection of the ear.

It is fortunate that the functions of the auditory nerve are seldom or never so completely destroyed that some power of hearing is not left. It is also singular how seldom the nerve is injured in general paralysis. It must be remembered that there is a branch of the fifth, as well as the proper nerves, the portio dura and mollis, all which have three origins, and form three media of connexion with the brain. This circumstance, and the fact that deafness occurs with the general decay of the energies of the brain oftener than from local injury of the brain, suggest a probability that the auditory impression is received by the brain itself, or as certain ancients believed, by the cerebellum, and that the sense resides chiefly in it.

Singing in the ears occurs indiscriminately *in all cases of deafness with or without discharge*. Dr. Grapengeisser observes that the *susurrus aurium* is a symptom which may form a distinct complaint without having the least influence upon hearing; *that*, it may arise from the same cause as deafness; *that*, difficulty of hearing may frequently but not always attend it; *that*, it may be of short duration, and originate either from inexplicable causes, or in plethoric persons, from cerebral congestion, from some change in the auditory nerves themselves, from topical debility of the auditory organ, or from an exanthematous eruption of the ear. The tinkling of the ears also supervenes to some species of fevers, and is not infrequent after apoplexy. In the last case it is generally concomitant to deafness, without being, however, a constant symptom of every species of that complaint, as it is sometimes not observed in the most complete deafness. Professor Hope, of Edinburgh, has suggested in examinations that some diseases, as hysteria, may produce tinnitus aurium, by setting the small muscles of the tympanum dancing. The auditory nerve after entering the cochlea and spreading over the vesicle in the vestibulum, is covered, according to modern anatomists, with a sheath of pia mater. May not these fixed sounds arise from morbid determination to this vascular membrane and consequent pulsating of its over excited vessels upon the fine organ of sense, as objects upon the retina are produced by the increased impulse of the vessels in the first stages of amaurosis?

PRINCIPLES OF TREATMENT AND CURATIVE PROCESSES.

It is said, "The instructed scribe will resemble the householder, who brings forth out of his treasure new things and old." The manner in which the ancients treated deafness is not unworthy of notice. Their remedies were chiefly external. I have collected the following list from several old authors.—1. *External applications*:—The leaves of the *dipsacum* and *jew's-ear*. 2. *As injections*:—*Ale-hoof* or *ground-ivy*: "The essence dropped into the ears helps the deafness or noise there;" *hyssop*: "It taketh away noise in the ear by injection."—3. *Tobacco*: "The essence of it made with wine being dropped into the ears helps deafness."—4. Juice of *poplar* or *aspen* tree.—5. Juice of *liquorice*, ℥ii; soft *bedellium*, ℥ss; sugar-candy, ℥ii, dissolved; juice of leeks, ℥iv; juice of celandine, ℥j, mixed and "dropt into the ears, helps imposthumes, noise, and pain there."—6. *Common turpentine*, *turpentine of the larch*: a combination of turpentine, olive oil, essential oils, and sulphur, was used with "happy success."—7. *Urine* of *men* and *animals*, dropt into the ears.—8. "The *galls* of all creatures," says Salmon, are "specifics for deafness, noise, and pain in the ears, with running matter. Of beasts the bull's gall is the strongest, and of birds, that of the partridge and heron, the gall of birds being accounted stronger than that of beasts. Waters, extracts, or tinctures, may be made of them, but the most famous is the tincture or powders of ox-gall." (*The preparations now commonly used by aurists.—F.*) An "extract made of human gall and ox-gall mixed with breast-milk, dropt into the ear, being stopped with cotton dipt into the same, cures pain and noise in the ears. Dog's gall dropt in warm goat's milk, with honey, wolf's, mice's, to bring out insects; bull's, mixed with honey or balsam, sheep's, with breast-milk, and injected with a syringe," are all recommended by the old authors. Such is the origin of the nostrums which aurists and "auld wives" now prescribe.—9. *Miscellaneous*: Powdered horse-dung (which contains ammonia), fat of dormice, lion's brains made into an oil, musk put into the ears stopped with cotton, heron's and goose grease, *hog's lice* and *earwigs* (!) boiled in oil and mingled with hare's urine, and put into the ears morning and evening." Moths. 3. *An*

masticatories and *errhines*:—Masticatories of mastich, pyrettrum, cummin, and cloves, twice a day, and errhines of the betonica and melissa, aa., ʒss; vel. alb. aa., ʒi, M. To be drawn up the nostrils in fragments.

Salmon, in his "above seven hundred eminent cures in the most usual diseases happening to humane bodies, done by several famous physicians and performed by the author hereof" (1685), gives eight cases of deafness, which were treated chiefly by bleeding, purging, dry cupping, steaming the ear with herbs put into solutions of fixed alkali, and hot fomentations of the head. It is interesting to mark the progress of therapeutics, by comparing the ancient with modern practice; I shall, therefore, give brief abstracts of the most striking particulars in these cases. The whole tend to prove, that however erroneous were the theories which they entertained of old, their general plans of treatment were equally sound, if not more energetic and decisive, than the systems laid down in modern books on deafness. Instead, indeed, of the practice being better than formerly, it has rather grown worse; it is more feeble, and less directly applied to the general cause, if it be, as we think, a pathological condition mostly consisting in congestion of the capillaries of the ear.

Case 1. Romish priest, 48 æt., cured by purging with antimony, "agreeable to the judgment of Hippocrates, who says, that deafness is cured by purging," and "by potential cauteries to the thigh to repel the humours from the ears to the inferior parts," and by the essence of thyme and cloves instilled into his ears morning and evening. "Cured in a month."

Case 2. Gentleman, 60 æt., deaf from the excessively penetrating cold of the Pyrenean mountains. (Yet a lady, a she-ass no doubt, lately went from Cheltenham to the Pyrenees to get well of deafness!—F.) Cured by the same remedies.

Case 3. A nun, 34 æt., "very thick of hearing," and "had a great and frequent noise in her ears." "By God's assistance I cured her with the following things:—In the morning before meat, her body being exonerated of its excrements, her head was washed in a lie, in which was boiled a handful of mint, penny-royal, and asarum roots, then well rubbed with hot cloths, dried, and covered." A stimulatory of white hellebore, &c., was "*blown up* her nostrils, by which much thick and clammy sneevel was cast forth; bleeding plentifully from the *head* veins in each arm."

Case 4. Ulcer in the right ear, with difficulty of hearing. Cured by bleeding in the cephalic on the hand, and afterwards in the median on the arm, using stimulatories, and applying five drops of oil of sulphur night and morning to the meatus externus.

Case 5. Perfect deafness in a senator, 76 æt. The stimulatory and oil of sulphur practice. "This man, *by the grace of God*, was cured by me. After the same manner, *praise be to God*, we have cured many others of deafness."

Case 6. Woman deaf of one ear, and thick of hearing in the other. "Often let blood, but was still worse." "Cupping glasses without scarification to her shoulders, three days together, every month; this did much good; washing the head with a lixivium of cephalic herbs; pills for fourteen days, with rubbing and combing; chewing a masticatory, which made her spit much, so that a great revulsion was made from her ears;" carp gall, dipped in fennel and caraway-water and spirits of juniper, dropped into her ears; fuming her ears through a funnel with the fumes of origanum, rue, marjorum, lavender, juniper, bay berries, fennel, caraways, and cummin, boiled in wine.*

Case 7. A woman, many years thick of hearing. Purging; fuming of the ears; three drops of a mixture of water of galls, honey, turpentine, fennel, and sulphur, with eye-bright, mixed and dropped into the ears.

Case 8. Difficulty of hearing and noise in the ears, from a fall. Three cupping glasses applied on both sides; one under the ears, the next on the top of the shoulder, and the lowest on the shoulder-blades, with fire; the next day the same again, and the third day with scarification; purging; "she *sweated, fasting in a hot-house!* and after, washed her head and feet with a lye of oak-ashes and a little lime, in which were boiled lavender and spikenard. By the use of these things the noise in the ears ceased, and came no more."

These cases show that deafness is not a bit better treated now than a century and half ago, nor so efficiently.

The modern curative processes employed in deafness are both local and constitutional. The same agents, with little difference, are applicable to deafness *with* and *without discharge*. The local remedies, commonly used in this country, are gargles, injections, medicated tents, external irritants, and leeches. M. Itard, of Paris, spoke contemptuously of these methods, and of our practice in deafness generally, as extremely imbecile, comparatively with the French. It is the opinion of the intelligent and thinking part of the English, who have resided long in France, that the French physicians, though less decided and vigorous in acute diseases,

* The French still use aromatic herbs in fomentations with more effect than if they were mere hot water or vapour. We have carried theory and simplification too far in these and other respects.

treat chronic diseases with much more skill, much more attention to detail, than English practitioners. Let us have an English doctor for an acute disease, and a French one for a chronic disorder, is a common saying among them. The French physicians, from being incomparably superior as anatomists and physiologists, and far more conversant with morbid anatomy, which is the great foundation of properly directed treatment, penetrate much more acutely and analytically into the nature, seats, and causes of diseases, and instead of taking a sweeping and general view, and giving a random definition at a *coup d'œil*, trace the diseased action patiently from part to part, separate its difficult and entangled links, and combat it wherever they find it. The French translator of "Thomson on Inflammation" observes, in his preface, that an English physician's knowledge consists in bleeding, purging, and giving mercury for *every thing*, after which he is at his wit's end.

In deafness *with discharge*, injections are of the greatest service. In deafness without discharge, in which the ceruminous glands are in a torpid or generally morbid state, the stimulus is frequently salutary. The patient finds his hearing more confused for a time after the use of them, but it soon becomes clearer. Whether moisture supply the place of wax as a conductor of sound, or act on another principle in its immediate effect in improving the hearing, I cannot decide. In all cases, with or without discharge, with or without injury of the membrane of the tympanum, or whether they be transmitted by the external porch, or through the Eustachian tube into the tympanum, the rule has been established from the earliest periods that injections should be mild in quality. They should also be warm; cold injections cause catarrhs, violent headachs, noise in the ears, and lower the sensibility of these organs. Water softened and made oily with castile soap, a weak solution of lead in distilled water (for example — ℞ *Vin. opii*, ʒss; *plumbi superac.*, gr. viii; *aquæ dist.*, ʒvi) or milk, tepid lime-water and milk, constitute the usual injections for the *meatus externus*. The French surgeons use a decoction of the stems of the soapwort (*saponaria officinalis*), the brook dandelion, and other herbs, which they inject with a forcing pump to the quantity of seven pints daily. To show their method, and to signify several other interesting points, I shall here detail a case. Understanding that Mrs. R., a lady of Lymington, Hants, had gone to France in 1824, and had placed herself under the care of an eminent French practiser for deafness, and, after a long course of treatment, by means of these injections, the frequent use of vapour-baths medicated with elder, chamomile, and lavender, flowers had recovered the sense, I applied for the particulars of her case from the lady herself, through Messrs. Moody and Gauntlett, surgeons' instrument makers at Bath, who first mentioned it to me. The plan consisted in the constant application of leeches inside and behind the ears, and linseed poultices, until all appearances of the local inflammation ceased. She goes on in her letter:—"I used also a syringe-pump at the same time. The injection was a luke-warm decoction of soapwort made with soft water. This was continued for some months. I then began a course of vapour baths, in which I am now persisting. My instructions were to resume the bath during the next three summers. My deafness originated from violent colds, with redness, inflammation, and hardness of the skin." To give solidity to my statements, it has been usual on my part to suffer two or three years' elapse, before I give out cases to the public as CURES PERFORMED. I have seen enough of the *ultimate* results of *boasted cures* by this or that marvellous personage of the trading *cure-mongering* and *John Long* school, after, as the wonder always goes, the poor noodle-headed patient "had been under the *first* men in the country," who had failed and been utterly discomfited, to know how to estimate the first temporary and deceitful appearances of relief in old and chronic cases, and to be convinced of the fallacious nature of the popular impressions which they produce at the time. After the expiration of *two or three* years, something like a reasonable conclusion may be formed, whether a man have made any real impression or none upon a disease; whether he have made what people call "a *firm* cure,"—a cure that will stand. But whenever an individual or his puffers go trumpeting about, that the former has cured a chronic disease upon the ground of changes, which have stood the test of merely days or weeks; time, in nine cases out of ten, exposes the hollowness of these boasts and puffs, and the real purse-milking motives of them. Therefore it is that the watering-place doctors, who seek "the *bubble*-reputation at the *liar's* mouth," and who know their *trade*, but not their *art*, *take care* to send their patients away *in time*, from certain glorious decoys for gulls. It ought to be the rule of every patient who has the faculties of a rational being (and such patients, I admit, are very few in number), when told of a cure, to ask the great actor how long ago it happened; and if a short time only has elapsed, he may set it down that no dependence is as yet to be placed on its permanency, knowing the necessity of deferred testimony; but without personal feelings towards the French physician, which would be applicable in

this case, I was curious to know how far this CURE stood firm in the end, and therefore made it a matter of particular inquiry. As she herself relates in 1824, she had recovered, though her deafness was so complete, that she could not hear the noise of carriages in the streets of the town. It had come on in the course of a scaly cutaneous disease, with strumous discharges near the ear. The treatment of the French physician cured the deafness and cutaneous disease after great perseverance, and she grew corpulent during the use of the baths from the improvement of her constitution. After she returned to England, a vapour bath was constructed for the purpose of steaming her body with the vapour of vinegar and water passed through camomile and lavender flowers. This stimulus softened and separated the scales, and restored the skin to its healthy action and natural perspiration. But mark the sequel! In 1826, the artificial amendment had given way, and *the cutaneous disease and deafness had returned, with all the manifestations of a confirmed strumous habit*! We hear of more cures in the world than were ever performed.

ST. BARTHOLOMEW'S HOSPITAL.

STRANGULATED INGUINAL HERNIA.

MARY ROBINSON, a delicate-looking woman, ætat. 45, was admitted into Sitwell's Ward, on Friday, Feb. 11th, at noon, under the care of Mr. Vincent.

She has a tumour of the shape and about the size of a pigeon's egg, in front of the external abdominal ring. She vomited immediately before she came here, but has not since. She has excessive nausea, her abdomen is rather tense, and very tender to the touch, particularly in the vicinity of the umbilicus. Countenance anxious; tongue white; pulse frequent and small, with occasional hiccup. She states, that about twelve years since, during a difficult labour, a rupture took place; it did not produce much inconvenience, and she returned it herself. The hernia has frequently descended since, and she has succeeded in returning it in every instance without much difficulty, and has never worn a truss. Last *Tuesday week*, while engaged about her domestic concerns, but not using more than ordinary exertion, it again protruded, and she was unable to return it. Her alimentary canal continued to perform its functions until *Monday last*, since which her bowels have not been relieved, and she has suffered from incessant nausea and vomiting. Attempts were made, previous to her coming here, to reduce the hernia, but were unsuccessful. Immediately after her admission, the taxis was had recourse to, and the hernia returned into the canal, but could not be passed through the internal ring; as soon as the pressure was discontinued, the gut again protruded. She was then put into a warm bath, and remained in it twenty minutes. The taxis was again employed while she was in the bath, with the same result as before. Mr. Vincent saw her at two o'clock, and proceeded to perform the operation directly, and did it in the usual manner. When the sac was opened, a portion of ilium, about three inches long, and of a dark-rose colour, was exposed. The stricture was at the internal ring, and was formed by the neck of the sac. As soon as the stricture was divided, some fluid, having a peculiar odour, escaped. The intestine was drawn out of the abdomen for about two inches, and appeared healthy beyond the stricture. In the line of the stricture an opening was seen in the gut, with a hernia of the mucous membrane, capable of admitting the extremity of the little-finger, through which some very fetid, whey-like-looking fluid escaped. Two small ulcers were seen close to this opening, but it was thought that they did not extend to the mucous membrane. Mr. Vincent then held a consultation with his colleagues as to the propriety of closing the opening by means of a ligature. Mr. Lawrence and Mr. Stanley each related a case similar to the present, in which the opening had been closed by a ligature, and the termination of the case had been such as to induce them to recommend the adoption of the same practice in the present instance. Mr. Vincent immediately closed the opening with a fine silk ligature, and cut off its extremities close to the knot. When this had been done, fluid was seen escaping through the two small ulcers, which were close to the one which had been just closed. Another ligature was then tied around the one already applied, and its extremities left undivided. The intestine was then returned into the abdomen, and the ulcerated portion retained opposite the external opening by means of the ends of the silk being brought through the wound, which was then closed by adhesive plaster. A bandage was applied in the usual manner, and the patient removed from the theatre. Her pulse flagged a good deal during the operation, and when she was put to bed, it was so feeble as to be scarcely perceptible, and some wine was given to her. Mr. Vincent saw her again at three o'clock, she had then rallied, and her pulse was much more distinct. She was ordered to have an enema immediately, which was administered, but returned directly, unmixed with fæcal matter.

Seven o'clock P.M. She was seen at five

o'clock, and ordered to take *two drachms of the sulphate of magnesia in a saline draught, every second hour.* She has had one copious evacuation, which was dark coloured, but not very offensive; there has been no recurrence of the vomiting; her pulse is small and very rapid; tongue whitish and moist; abdomen tense and painful to the touch; skin moist. *Let her continue her medicine.*

12. Ten o'clock A.M. Has had three copious evacuations since our last visit; slept till three o'clock, when she was awoke by an attack of pain in the region of the umbilicus. The sister of the ward fomented her abdomen, which relieved her very much. Her abdomen is now very tense, and the slightest pressure on it is productive of extreme pain. Pulse 130, and rather full; skin moist; tongue white and dry; no vomiting. *Thirty leeches to be applied to the abdomen, after which the fomentations to be repeated, and the medicine to be continued.*

One o'clock P.M. Pain and tension of the abdomen much relieved; leeches have bled very freely; she appears faint; has vomited twice since ten o'clock; pulse frequent and feeble; respiration laborious, and performed by the chest alone; bowels not open since; about an hour ago she expressed a wish for an enema, which was administered, and returned in a few minutes. She says she felt much relieved after it. *To discontinue the draught, and to take three grains of calomel with a quarter of a grain of opium every second hour.*

Three o'clock P.M. Has taken two doses of calomel and opium; the pain and tension of the abdomen are much increased; pulse very small, and so frequent as to preclude the possibility of counting it; countenance expressive of anxiety; difficulty of respiration much increased; skin bedewed with cold clammy perspiration; occasional hiccup, and great prostration of strength. *To take an ounce of port-wine directly, to repeat the leeches, fomentations, and enema.*

13. She died last night at six o'clock, and was removed from the hospital within half an hour afterwards, consequently no post-mortem examination was made.

WESTMINSTER HOSPITAL.

Arrangements are about to be made at this hospital for the delivery of clinical lectures to the medical pupils. Dr. Hamilton Roe, the junior physician, upon whom this duty will devolve, proposes to have a ward appropriated to such patients as are sufficiently interesting to be made the subjects of comment. (*February.*)

The annual accounts have been lately closed, and the result is certainly creditable to the care and attention of the officers. In the medical department especially, the expenditure of medicines has greatly diminished, whilst the number of patients has progressively augmented. This will be made clear by the following little table:—

	No. of Patients.	Cost of Medicines.
1827 ..	2183	£ 558 3 3
1828 ..	2432	386 1 11
1829 ..	2515	323 15 0
1830 ..	4015	356 4 0

This remarkable reduction of expenditure is chiefly ascribable to the vigilance and frugality of Mr. Edwards.

Since the defeat of the scheme for removing the hospital to Charing-cross, the directors of the institution have been actively engaged in search of a site in the immediate neighbourhood of the present building, but hitherto no definitive arrangement has been proposed. Negociations have been some time on foot for a site in Prince's-street, opposite the west end of the abbey, and this plan seems to unite all suffrages in its support, as it presents an improved situation in the very heart of old Westminster. We shall lay before our readers, historical sketches of the most interesting cases which may be treated by the physicians and surgeons of this establishment, together with such clinical comments as these gentlemen may make upon them.

Owing to the injudicious construction, imperfect ventilation, and crowded state of the wards, where scarcely 400 cubic feet of respiratory space is afforded to each patient, relapses frequently occur, and as may be supposed from the depletion effected in the treatment of the first attack, are very intractable. The rooms being long and narrow, and warmed by one large fire-place only, their temperature is rendered unequal; it produces at each end the extremes of heat and cold. The windows are so inconveniently situated that a sash cannot be lowered to purify the atmosphere, without directing a current of air upon one of the patients.

HEPATITIS CHRONICA.

Richard Harrison, ætat. 58, a painter, was admitted the 17th November, 1830, with *chronic hepatitis* and other sequelæ of *colica pictonum*. His constitution was originally good, but it has been severely shaken by repeated attacks of this disease, to which he first became subject in his twentieth year. After this he experienced an attack annually, until about six years ago, when he was first exempted from it. Severe bilious attacks, however, followed in the train of the old disease, and he has hardly ever been free from hepatic symptoms,

These have ever and anon been relieved by cupping, and turpentine and castor-oil draughts.

On admission, the skin and conjunctivæ were of a light yellow hue, the countenance anxious, and the features sharp, indicative of that mental prostration which is characteristic of the chronic stage of painter's cholic.

The tongue is furred and flabby, the bowels are confined, the pain of abdomen relieved on pressure, and occasional lancinating pains in the elbows and knees annoy him. The patient was early married, and he does not appear to have ever been inordinately addicted to sensual pleasures. —*Opium, two grains; calomel. four grains. Make a bolus to be taken at bed-time.*

18. This morning he is much better; he has slept well, the first time for ten days; his sympathetic pains have abated; bowels confined; pulse 108, and feeble.—*Castor oil, one ounce, to be taken every two hours until the bowels be opened.*

19. The bowels have acted well, and he has slept profoundly; at present he has no pain whatever.—*Let him take the pill twice a-day.*

20. Somewhat better; he is annoyed with nausea: the emunctories do their duty tolerably, and he sleeps well.

27. He has continued without much variation since the last note; he has been entirely free from pain, but has experienced a gradual diminution of strength and loss of appetite; to-day the pulse is 102, rather voluminous and feeble; and it is deemed expedient to give him the following tonic.—*Sulphate of quinine, two grains, to be taken three times a-day, in the form of a draught.*

Dec. 2. He suffers great inequality of spirits; at one moment they are buoyant, at another miserably depressed; his rest is again disturbed, and he complains of dull pain in his bones; he has tenderness in his right hypochondrium, and his countenance is more sallow than before. Pulse moderately full and regular; bowels scantily open; and he has scarcely strength to sit up in bed.—*Opium, one grain; blue pill, five grains. Make a pill, to be taken every night.—Decoction of dandelion, one ounce; castor oil, half an ounce, to be taken every morning.*

6. His health has varied like an April day; the tenderness extended from the right hypochondrium over the whole abdomen, and a blister was consequently applied to that region, and afforded signal relief: this was followed by an amendment in the general state of the patient, and the constitution seemed for a while to rally with sufficient force to throw off all its ailments; but the poor fellow again soon relapsed into a state of depression, and the disease again resumed its ascendency. He now sleeps indifferently; the bowels are open scantily; there is an evident fluctuation of fluid in the abdomen, and his legs have become œdematous: pulse 100 of moderate force. —*Extract of colocynth, ten grains,* immediately.

11. The colocynth acted freely upon the patient's bowels, and there was a faint amelioration in his condition. On the subsequent day, however, a slight sore throat supervened, which consisted of a mere rubescence of the internal fauces. The strength of the patient gradually diminished, the quantity of fluid in the abdomen increased, and was attended with pain and tenderness: for this a blister was applied, and temporary relief afforded; but the fulcrum of his constitution was gone, and its permanent reanimation was hopeless. To day he is exceedingly feeble; he has a difficulty of swallowing, owing to a copious secretion of viscid mucus in the throat; his countenance however is tranquil, and his pupils are dilated; the pulse 120, and very feeble. *Port wine, four ounces daily.*

13. The difficulty of swallowing increasing, a sinapism was applied to the throat, the tongue became excessively swollen, but did not materially impede respiration: this organ was scarified and its size reduced; he had difficulty in swallowing his wine, became gradually exhausted, and expired this afternoon.

Autopsy twenty-four hours after death.

The patient was much emaciated: immediately on opening the thoracic and abdominal cavities, considerable vesceral disease was evident. In the abdomen, adhesions between the organs were very general; the liver and stomach were both covered with a thick coating of coagulable lymph, flakes of which were floating in a large quantity of serum which existed in this cavity. The substance of the liver was condensed throughout, and its functions in several parts obliterated; the mucus membrane of the alimentary canal presented vestiges of inflammation. In the thorax old adhesions existed between the proper and reflected pleuræ, and the substance of the lung was studded with tubercles of various ages. The mucous tunic of the larynx and bronchiæ was considerably injected; but the mucous membrane of the pharynx was quite healthy, and the substance of the tongue exhibited only the appearance of a simple tumefaction.

NAVAL SURGEONS.

THE following letter was received at the Editor's residence at the moment the Journal was going to press.

RESULT OF THE DEPUTATION TO THE LORD CHAMBERLAIN.—

THE ORDER OF EXCLUSION FROM HIS MAJESTY'S LEVEES RESCINDED.

To the Members of the Royal College of Surgeons.

GENTLEMEN,—In obedience to your resolution of the 8th inst., we have this day waited on his Grace the Duke of Devonshire, on the subject of the exclusion of the surgeons and assistant-surgeons of the navy from his Majesty's levees. His Grace said he had great pleasure in being able to authorize us to communicate to you the following answer:—

"That his Majesty entertained the kindest feelings towards the surgeons and assistant-surgeons of his navy; that the order complained of was rescinded, and that in future those officers would be admitted to the levees through the Lords of the Admiralty."

Offering you our warmest congratulations upon this result, we have the honour to remain, your faithful servants,

GEORGE WALKER,
THOMAS KING.

209, Piccadilly, March 17, 1831.

P.S. Mr. Wakley having been subpœnaed to attend a trial at Maidstone this day, he was deprived the pleasure of joining the deputation.

COLLEGE OF PHYSICIANS.

To the Editor of THE LANCET.

SIR,—Will you have the kindness to inform the discontented author of the letter signed "A Licentiate" (page 799 of your last Number), that the College of Physicians exacts nothing beyond what it is entitled to exact by virtue of the act of Parliament and the College charter,—that all the students at each of our universities have just as much right to complain of the College and other *fees* exacted from them there. So again, in all public and government offices, he will find that whoever applies for their advantages, is subject to demands on his purse,—that in law he is drained of *fees* at every step,—and, in short, that there must be a thorough revolution in all these institutions and proceedings, before his *quid pro quo* accounts can be satisfactorily audited,—that if he be an Aberdeen or other Dub, he cannot expect to enjoy the privileges of better educated men, and must submit to the privation, and stifle his *l. s. d.* murmurs, satisfied with the privilege, that his paltry "32*l.*" gives of making his fortune (as many licentiates do), by the power which he cannot otherwise obtain of practising as a physician *at all* in or near London. As to his discontent at the paper which he heard at the College—if it contained many "*self-evident facts*," they are surely preferable to *lies* which *elude* detection. If it yielded but "little instruction," let him supply the College (if he can!) with one that yields more! If he felt "disappointment," he was quite at liberty to walk out, without, probably, the fear of any one missing him! And if he "regret the loss of time," advise him to go and employ it in future more to his "benefit or satisfaction."

I am, Sir,
Your obedient servant,
AGRESTIS.

[For a letter on the same subject, but of a very different tenor from the above, we have not room this week.—ED. L.]

TO CORRESPONDENTS.

We are again most reluctantly compelled to postpone the insertion of several communications which we have long had on hand; but we shall speedily be enabled to discharge all the claims our correspondents have on us,—we hope to their satisfaction.